STATE OF MICHIGAN

JENNIFER M. GRANHOLM
GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LANSING

REBECCA A. HUMPHRIES
DIRECTOR

September 29, 2006

The Honorable Michelle McManus, Chair
Senate Appropriations Subcommittee on
Natural Resources
905 Farnum Building
P.O. Box 30036
Lansing, Michigan 48909-7536

The Honorable Howard Walker, Chair
House Appropriations Subcommittee on
Natural Resources
S-1388 House Office Building
P.O. Box 30014
Lansing, Michigan 48909-7514

Dear Senator McManus and Representative Walker:

Public Act 154 of 2005, Section 502, requires the Department of Natural Resources to submit a report on the bobcat population in the Lower Peninsula, and the impact of bobcat harvest on that population. Attached please find our response. It consists of the bobcat status report, as well as several surveys that provide supporting documentation.

Thank you for your assistance in this matter. If you have any questions or need additional information, please contact Mr. Michael Bailey, Management Section Supervisor, Wildlife Division, or Mr. David Bostick, Furbearer Specialist, Wildlife Division, at 517-373-9336, or you may contact me.

Sincerely,

Sharon M. Schafer, Chief
Budget and Support Services
517-335-3276

Attachments
cc: Senate Appropriations Subcommittee Members
House Appropriations Subcommittee Members
Ms. Jessica Runnels, Senate Fiscal Agency
Dr. Kirk Lindquist, House Fiscal Agency
Ms. Mary Lannoye, Department of Management and Budget (DMB)
Mr. Jacques McNeely, DMB
Ms. Jennifer Harrison, DMB
Director Rebecca A. Humphries, DNR
Mr. Dennis Fedewa, Chief Deputy, DNR
Ms. Mindy Koch, Resource Management Deputy, DNR
Mr. Dennis Fox, Chief of Staff, DNR
Mr. Rodney Stokes, Legislative Liaison, DNR
Dr. Bill Moritz, DNR
Ms. Jane Schultz, DNR

NATURAL RESOURCES COMMISSION
Keith J. Charters-Chair ● Mary Brown ● Darnell Earley ● Bob Garner ● Gerald Hall ● John Madigan ● Frank Wheatlake

BOBCAT BOILERPLATE REPORT

Public Act PA154 of 2005:
Section 502. By September 30, 2006, the department shall submit to the state budget director, the chairs of the senate and house appropriations subcommittees on natural resources, and the senate and house fiscal agencies, a report on the population of bobcats in the lower peninsula of the state and the impact of bobcat harvest on the population. The department and the commission are urged to prohibit the trapping of bobcats in the lower peninsula until the report is released.

Regulatory Authority:
CITES:
Under the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES), bobcat are listed as an Appendix II species. The export of any bobcat requires presentation of an export permit. Furthermore, an export permit shall only be granted when a Scientific Authority of the state of export has advised that such export will not be detrimental to the survival of that species. For complete CITES text, please visit http://www.cites.org.

Michigan:
The Department of Natural Resources (DNR) Wildlife Division's mission is to enhance, restore, and conserve the state's wildlife resources, natural communities, and ecosystems for the benefit of Michigan's citizens, visitors, and future generations.

Voters adopted Proposal G in November 1996, vesting exclusive authority in the Natural Resources Commission (NRC) to regulate the taking of game. In addition, the NRC is to use principles of sound science to the greatest extent practicable when making decisions regarding the taking of game. Laws and regulations concerning harvest of bobcat by hunting and trapping are contained in Public Act 451 and Section 3.608, of the Wildlife Conservation Order respectively.

Bobcat Life History:
The bobcat (*Felis rufus*) is a medium-sized wild cat about twice the size of a domestic cat. Occasionally, males can exceed forty pounds. They range in color from yellowish-brown to reddish-gray, and are often spotted black or brown. Their ears are pointed with a tuft of black hair. They have a short tail, usually less than eight inches long, that is also tipped in black.

Female bobcat typically breed between the first and second year of life. However, males typically do not breed until after two years of age. In Michigan, bobcats typically breed from January through May. Young are born about two months later, and the average litter size is two to three kittens.

Adult bobcat are solitary and very secretive creatures. They prefer areas with dense underbrush for stalking and ambushing prey. Their primary prey is small mammals, including voles and rabbits, but they are opportunistic predators that will also take birds and reptiles.

The bobcat is the most widely-distributed wild cat in North America. Its range extends from Mexico to southern Canada and it is found in all the continental United States, except Alaska. It is highly adaptable to living in habitat types, which include the swamps of the southeastern United States, the deserts of the southwest, and northern forest regions. In recent years they have been found in good numbers in the intensive agriculture areas of the Midwest including Illinois and Iowa.

In Michigan, confirmed records of bobcat are documented in every county with the exception of portions of the southeast (Figure 1). It is highly likely that bobcat exist in all counties of the state.

Bobcat Management History:
Historically, bobcats were hunted and trapped in all portions of Michigan until 1956, when trapping was prohibited in the lower peninsula. In 2004 and 2005, a limited trapping season was permitted in a portion of the lower peninsula. Presently, the state is divided into five bobcat management units, with each unit having different harvest regulations. The lower peninsula is divided into three bobcat management units (Units C, D and E; Figure 2). Within the northern lower peninsula (NLP), Unit C consists of Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Emmet, Montmorency, Oscoda, Otsego, and Presque Isle counties. Unit D includes Clare, Crawford, Gladwin, Iosco, Kalkaska, Missaukee, Ogemaw, Osceola, Roscommon, and Wexford counties. Unit E contains the remaining lower peninsula counties.

In 2004 and 2005, Units C and D were open to legal bobcat harvest (both hunting and trapping). Hunting season dates were January 1 through March 1 in Unit C, and January 1 through February 1 in Unit D. Bobcats could be hunted anywhere legal hunting was permitted (both public and private lands) in Units C and D. Legal forms of hunting included still hunting, using calls, and pursuit with dogs. Trapping season dates were December 10 through December 20 in Units C and D. Trapping was limited to private lands only (approximately 66 percent of Units C and D combined). Only foothold traps were legal for trapping bobcats. In 2006, Units C and D were closed to trapping as a result of a court order, however, these two units remain open to hunting with season dates unchanged from the previous two years. Since 1989, the season bag limit for bobcat in the NLP (Units C and D combined) has been one bobcat per person, per year, regardless of the method of harvest (i.e., trapping or hunting). Unit E is closed to legal bobcat harvest.

A person who intends to harvest a bobcat must request a free bobcat kill tag. A person who kills a bobcat shall immediately validate the tag and attach it to the bobcat. A person harvesting a bobcat must present the animal at a DNR office for registration. The DNR collects biological information from all registered bobcats including sex, date harvested, location harvested, and a tooth for aging. Additionally, an official seal (CITES tag) is attached to the bobcat pelt during registration. The CITES tag must be affixed to the hide in order to transport a bobcat pelt out of the United States.

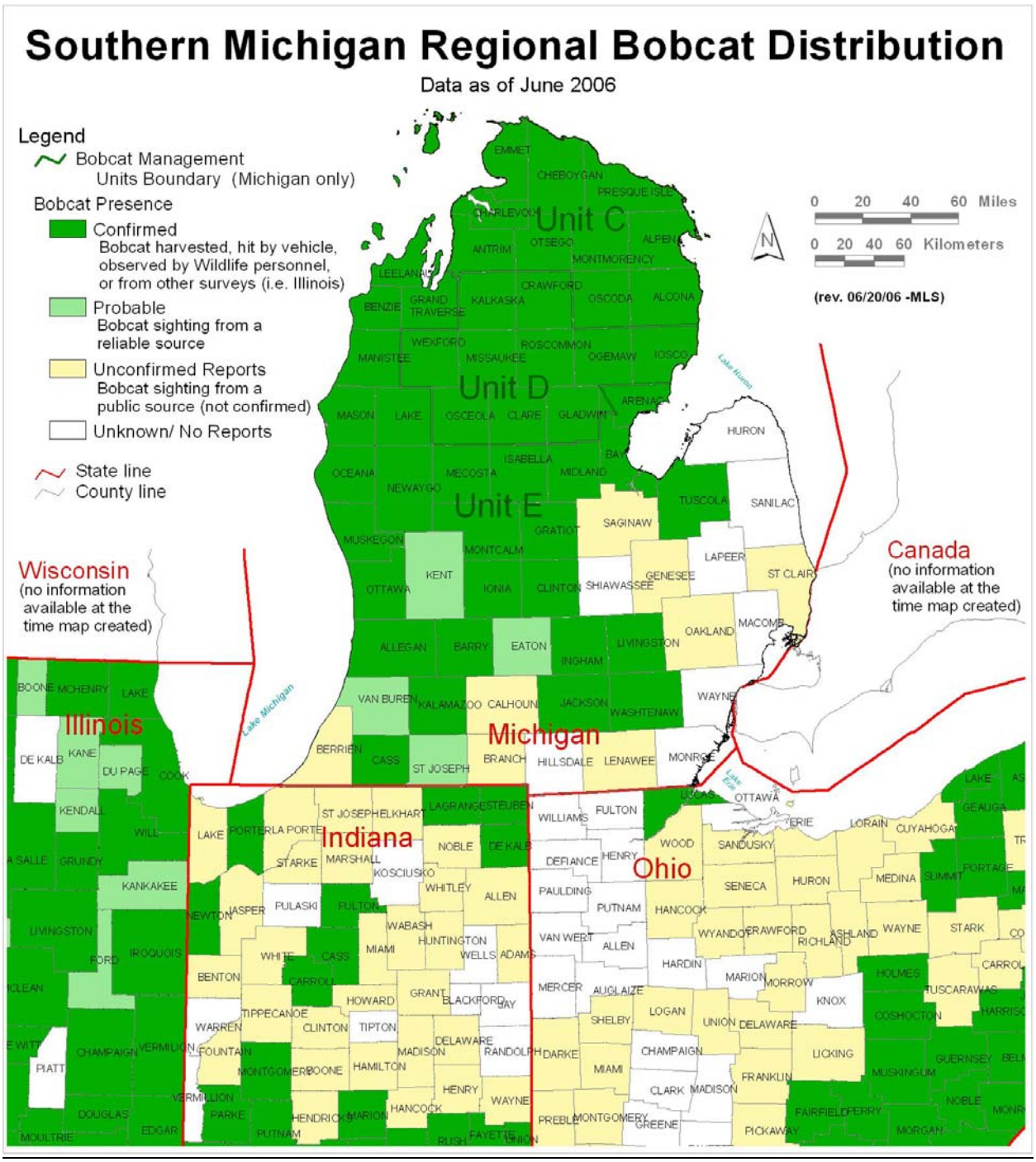

Figure 1: Regional map of the Midwestern states, which includes the lower peninsula of Michigan. Map depicts the presence of bobcats by county, based on confirmed, probable and unconfirmed observations from numerous sources and projects.

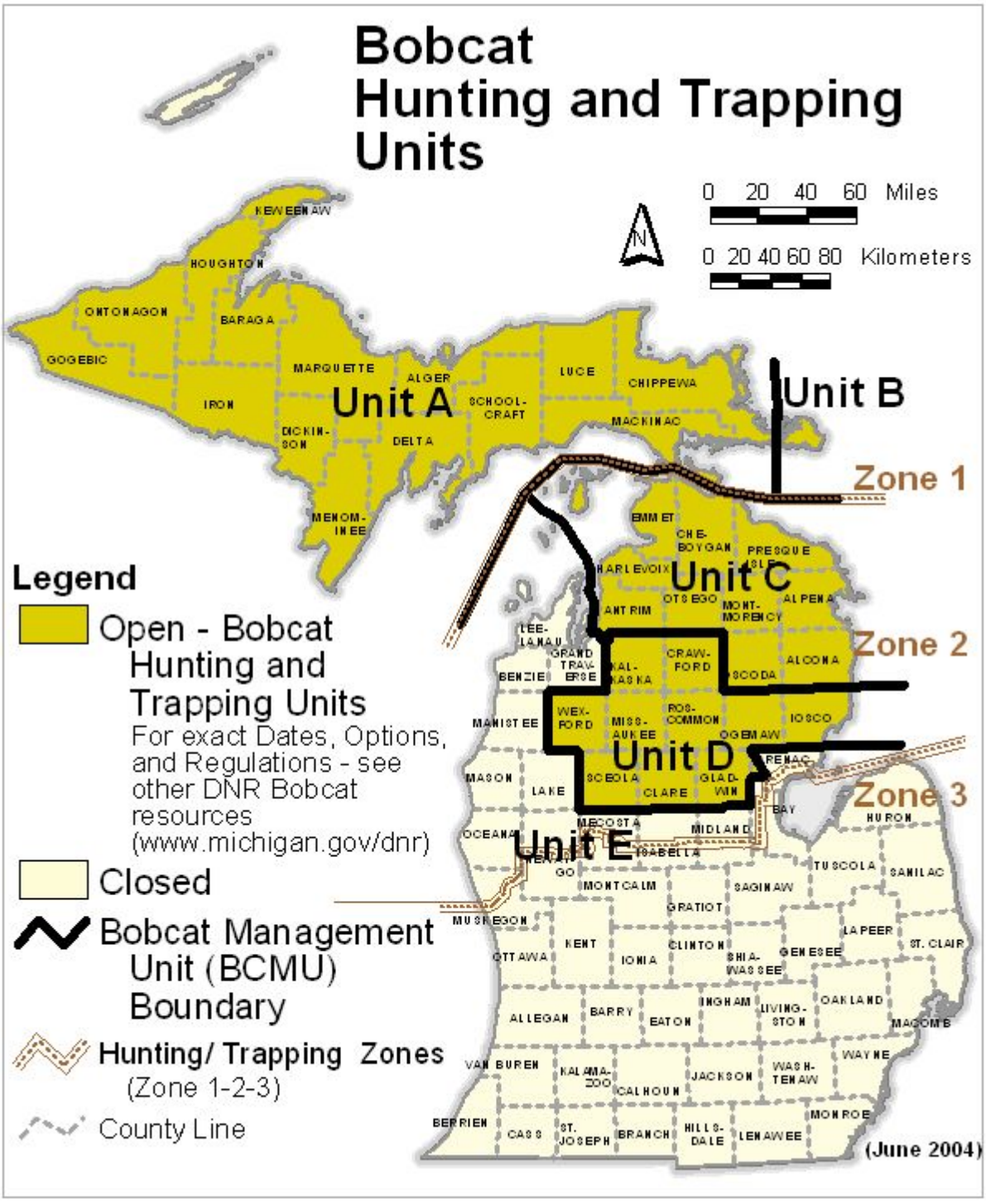

Figure 2: Bobcat Managements Units across the state.

Population Assessment:
The DNR uses multiple population indices to monitor the NLP bobcat population over time. Indices reflect changes in the status of the population (i.e., the population is increasing, decreasing, or stable over time), irrespective of the cause of a change. Population parameters, such as reproduction and mortality influence population abundance, which is reflected in the population indices. Because harvest levels in the NLP have remained relatively stable over time, changes in the population indices may indicate changes due to non-harvest mortality or reproductive factors.

The use of population indices to monitor wildlife populations is standard practice in wildlife ecology, and most states use a variety of indices for evaluating wildlife populations. The DNR considers the logistics of data collection, data reliability, ability of the index to detect population change, and cost when selecting an index. Historical, long-term data sets are also valuable for evaluating changes in harvest regulations over time.

The DNR uses the indices described below, to monitor the NLP bobcat population and to recommend changes in the Wildlife Conservation Order to the NRC. Each of these indices measures an attribute of the bobcat population and independently can be used to monitor changes in population status. Use of multiple indices strengthens the assessment of population status. None of the indices used by the DNR show any change in population status over time, indicating that the NLP bobcat population is stable. Agreement of all indices provides additional evidence that the population is stable.

One index used by the DNR is scent station surveys, a common technique used in wildlife management. Generally, changes in the population are reflected in changes in visitation rates to randomly placed baits. Central Michigan University (CMU) has conducted scent station surveys in a portion of the NLP since 2003. There was no change in visitation rates to survey routes for the three years, 2003 - 2005, suggesting the population was stable.

The DNR also monitors harvest sex and age distribution. Changes in the distribution of harvest sex and age structure are another population index that may reflect similar changes in the population. Shifts in sex and age structure often have implications for population abundance. Changes are evaluated over multiple years because annual variability in factors unrelated to the population (e.g., weather, hunter/trapper selectivity) can produce annual fluctuations in sex and age distributions. The DNR has recorded the sex and age of bobcats harvested since 1985. There are no apparent multiple year trends in sex and age distribution of the harvested bobcats from the NLP that would suggest a shift in population abundance.

Harvest effort is yet another population index used by the DNR to monitor the NLP bobcat population. In theory, the amount of effort (usually measured as time) required to harvest an individual animal is inversely proportional to the population size. Thus, as population declines, the effort (time) to capture an individual animal increases. Since 2003, the DNR has sampled a sufficient number of hunters from the NLP to produce a reliable estimate of effort (in days) required to harvest a bobcat. The precision of these estimates of hunter/trapper effort has

improved because the requirement for a mandatory bobcat kill tag provides a list of all hunters who intended to attempt to harvest bobcats and obtained the required tag. Estimates of the effort required for hunters to harvest a bobcat from the NLP have not differed for the three year period, 2003 through 2005, suggesting a stable population. Additionally, the effort required to harvest a bobcat by trapping can be viewed as independent of the effort required to harvest a bobcat by hunting because the two harvest methods are different. Estimates of the effort required for trappers to harvest a bobcat from the NLP did not differ between 2004 and 2005, further suggesting a stable population.

An opinion survey of bobcat hunters and trappers from the NLP conducted by the Wildlife Division provides additional evidence that the NLP bobcat population is stable. In 2004, about 59 percent of bobcat hunters and trappers believed that the NLP bobcat population was stable or increasing in the county where they hunted or trapped. About 16 percent of bobcat hunters and trappers believed the population was decreasing in the NLP and the remaining 25 percent were uncertain of the status of bobcats in the NLP (Attachment A; Wildlife Division Report No. 3427).

The indices listed above will remain in place so that the DNR can continue to evaluate the status of the bobcat population in the NLP. By continuing to use the same indices over time, information gained can be used in an adaptive management context, that is, if the indices demonstrate a shift in population levels, the DNR can recommend to the NRC, changes to the bobcat harvest season structure to respond to these changes.

Research:
The DNR has an extensive history of cooperating with researchers from CMU, Michigan State University (MSU), and the Little River Band of Ottawa Indians, to study the ecology of bobcat in the NLP. From 1991-1996, DNR biologists trapped, marked, and released 126 bobcat in the NLP. Information from these bobcat was used to assess injury from foothold traps, dispersal, survival, and population status. Results indicated that the NLP bobcat population was stable during the time the study was conducted.

In 2002, CMU began radio-collaring bobcat in Unit D. Fifteen bobcat were radio-collared and monitored from 2002 through 2004. Information from this study was used to evaluate bobcat survival and movements, and to develop a model of bobcat habitat in the NLP. This project has been expanded, in cooperation with the Little River Band of Ottawa Indians, to evaluate bobcat survival, movements, and habitat in a portion of Unit E. Information on bobcat survival and distribution in an area closed to harvest (Unit E) will be useful for evaluating the impacts of bobcat harvest in Units C and D.

Because of their secretive nature and relatively low densities, estimating bobcat population size is extremely difficult. However, microsatelite markers (genetics) provide promising new avenues for experimentally enumerating bobcat populations. The DNR and MSU are in the very early stages of evaluating several techniques for collecting genetic material from bobcats without having to capture and handle individual animals. If successful, these techniques may provide the data necessary to attempt to estimate the size of some bobcat populations.

Impacts of harvest and population status:

Including Michigan, 37 of the contiguous 48 states permit bobcat harvest by hunting and trapping. Additionally, Vermont permits the trapping of bobcat, but not hunting. Many of these states have season lengths that span several months and do not limit the number of bobcat that can be harvested by an individual hunter or trapper in a season. In comparison, shorter season lengths and an annual bag limit of one bobcat per person, per year, effectively limits the harvest of bobcats in Michigan's NLP.

The DNR closely monitors the annual harvest of bobcat in Michigan. Since 1985, the annual registered harvest from the NLP (Units C & D combined) has averaged 201 bobcats. The lowest recorded registered harvest (121), occurred in 1989 and the highest (296), occurred in 2002 (Figure 3). Both of these harvests were by hunting only. The registered harvest for the NLP for the 2004-2005 season was 265 bobcats.

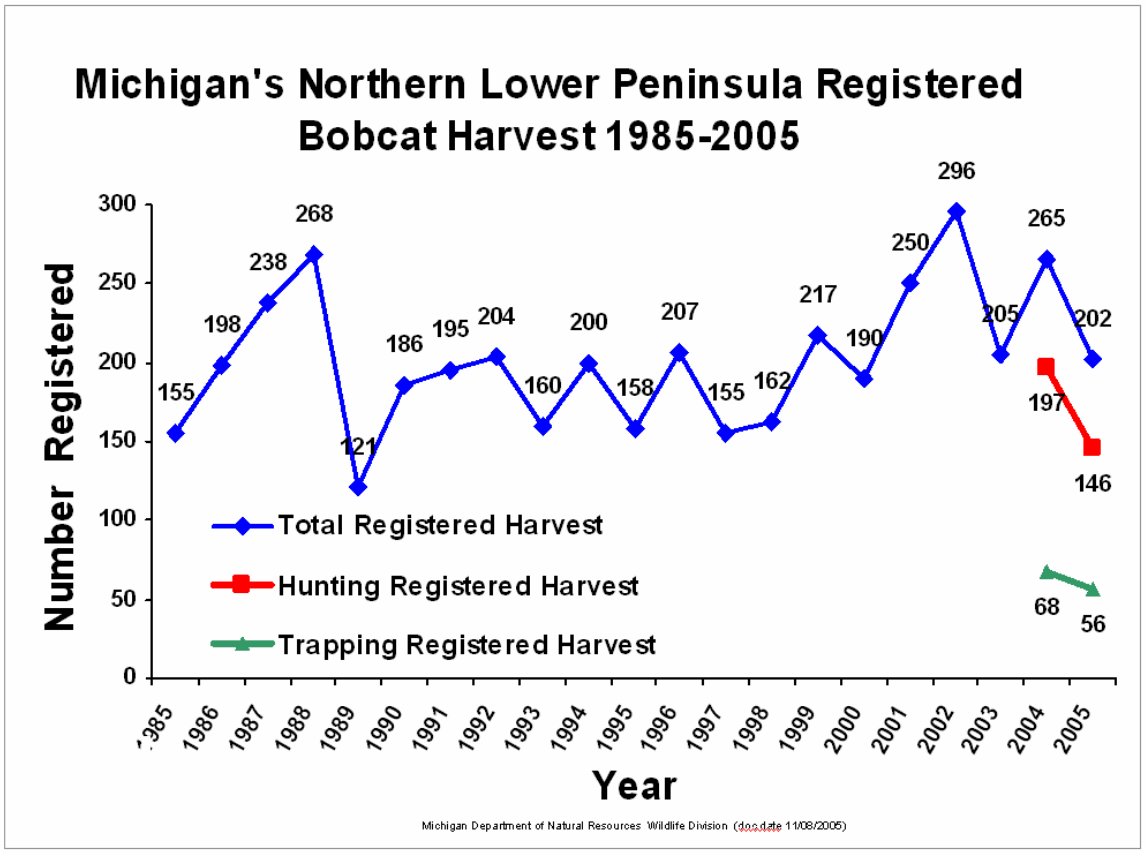

Figure3: Harvest trend shown over time (1985-2005) for NLP Michigan, based on number bobcats registered for combined harvests within units C and D.

Sixty-eight of these bobcats were harvested by trapping and 197 were harvested by hunting. The registered harvest for the NLP for the 2005-2006 season was 202 bobcats. Fifty-six of these bobcats were harvested by trapping and 146 were harvested by hunting. Both of these harvests

(hunting and trapping combined) fall within two standard deviations of the 1985-2003 mean (198), taken by hunting alone. Thus, trapping did not appear to increase harvest beyond what would have been expected by hunting alone.

The DNR uses additional surveys of hunters and trappers as an independent estimate of bobcat harvest. The July 2005 survey (Wildlife Division Report No. 3441) estimated that 82 bobcats were harvested by trapping and 215 bobcats were harvested by hunting, for a total of 297 bobcats harvested from the NLP (Attachment B).

Conclusions:

The biological information collected through registration, surveys, and research is reviewed annually by Wildlife Division biologists and presented to the NRC. The DNR and NRC have a long history of adapting harvest regulations to address changes in bobcat population status.

Based upon the actual harvest data, trend indices, opinion surveys, and other data presented above, the present population status of bobcat in the northern Lower Peninsula is stable. Furthermore, registration data collected from harvested bobcats, surveys of trappers and hunters, and continued field surveys and research provide the basis for regulating the take of bobcat using an adaptive resource management model. This adaptive resource management model ensures that recommendations on the bobcat season proposed by the DNR to the NRC are based on principles of sound scientific management.

Attachment A

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
Wildlife Division Report No. 3441
July 2005

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Michigan Department of Natural Resources

2004-2005 BOBCAT HUNTER AND TRAPPER HARVEST IN MICHIGAN

Brian J. Frawley, Dwayne Etter, and David Bostick

ABSTRACT

A survey was completed to determine the number of people hunting and trapping bobcats in Michigan, the number of days spent afield (effort), and the number of bobcats registered. In 2004, 3,725 people obtained a bobcat harvest permit valid for the hunting and trapping seasons. About 73% of these permit-holders attempted to hunt or trap bobcats (2,726 furtakers), and 30% of these furtakers registered at least one bobcat. An estimated 1,816 people attempted to hunt bobcats. Hunters spent 20,768 days hunting and registered 369 bobcats. Nearly 1,249 people attempted to trap bobcats. Trappers spent nearly 29,567 days trapping and registered 630 bobcats.

INTRODUCTION

The Michigan Department of Natural Resources (DNR) has the authority and responsibility to protect and manage the wildlife resources of the State of Michigan. Harvest surveys are one of the management tools used by the DNR to accomplish its statutory responsibility. Estimating hunter participation, harvest, and hunting effort are the primary objectives of these surveys. Estimates derived from harvest surveys as well as information from mandatory registration reports, winter track counts, and population modeling are used to monitor bobcat (*Lynx rufus*) populations and establish harvest regulations.

During 2004-2005, bobcats could be harvested during both hunting and trapping seasons (Table 1). In order to hunt or trap bobcats, furtakers were required to obtain a free bobcat harvest permit, in addition to a fur harvester license. In much of the area open to bobcat hunting and trapping, furtakers could legally take and register two bobcats in all of the hunting and trapping seasons combined. However, only one bobcat could be legally taken and registered in units C or D combined (Lower Peninsula), and only one bobcat could be taken from Unit B (Drummond Island) (Figure 1). Successful furtakers were required to immediately

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IC2578-89 (rev. 07/01/2005)

attach the harvest tag to the bobcat and also required to register bobcats by March 4, 2005. Furtakers were not allowed to keep bobcats that were beyond the legal limit of bobcats per person (incidental captures). Furtakers were required to bring incidental catches to a registration station if they could not be released alive.

Trappers could use foothold traps to capture bobcats in the Lower Peninsula (LP), while foothold and body-gripping traps (i.e., conibears) were legal in the Upper Peninsula (UP). Live traps were also legal in both the UP and LP if set within 150 yards of a residence or farm building. Snares were not legal to use in Michigan for capturing bobcats. Bobcat trapping was limited to private lands only in units C and D, while both public and private lands were open to trapping in units A and B. Most hunters used dogs or calls to take bobcats (Frawley et al. 2004).

Prior to the present survey, a separate survey was completed to estimate the number of people who attempted to trap bobcats and the harvest of bobcat by trappers in the LP during 2004 (Frawley et al. 2005). The earlier survey provided estimates of participation and bobcat harvest during the trapping season in the LP, while the present survey was intended to provide comprehensive statewide data from all 2004-2005 bobcat hunting and trapping seasons. Although all furtakers harvesting a bobcat were required to present their animals at a Department of Natural Resource office for registration, this survey does not present information collected from registered bobcats.

METHODS

A questionnaire was sent to everyone who obtained a bobcat harvest permit valid for the 2004-2005 hunting and trapping seasons (3,725 permit holders). Permit-holders receiving the questionnaire were asked to report if they attempted to hunt or trap a bobcat, number of days spent afield, and number of bobcats they registered. Hunters were also asked to report their hunting method (e.g., dogs, calls) and the number of bobcats that were within range to take but they chose not to harvest. Hunters that used dogs were asked to report who owned the dogs, number of occasions their dogs chased a bobcat, and whether they hired a guide. Trappers were asked to report the number of bobcats caught in traps and the number of bobcats released alive. Trappers also were asked to report the types of traps used, their preferred trap type, and whether they caught any bobcats in a trap set for another animal. All furtakers were asked the ownership of lands where they pursued bobcats and their opinion of the status of the bobcat population in the county where they preferred to hunt or trap.

Questionnaires were mailed initially during early March 2005, and up to two follow-up questionnaires were mailed to nonrespondents. Although 3,725 people were sent the questionnaire, 97 surveys were undeliverable resulting in an adjusted sample size of 3,628. Questionnaires were returned by 2,576 people, yielding a 71% adjusted response rate.

Estimates were extrapolated from the sample (2,576 returned questionnaires) to all permit holders (3,725) using a simple random sampling design (Cochran 1977) and were presented along with their 95% confidence limit (CL). This confidence limit can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies the true value would be within this interval 95 times out of 100. Estimates were not adjusted for possible response or

nonresponse bias.

RESULTS

Hunting and Trapping Combined

In 2004, 3,725 people obtained a bobcat harvest permit valid for the bobcat hunting and trapping seasons. About 73 ± 1% (2,726) of these permit holders attempted to hunt or trap bobcats (Table 2). Furthermore, about 9 ± 1% (340 ± 23) of the permit holders attempted both hunting and trapping bobcats.

Furtakers spent 50,335 days afield ($\bar{x}$ = 18.5 ± 0.6 days/furtaker) and registered 999 bobcats ($\bar{x}$ = 0.37 ± 0.02 bobcats/furtaker). Furtakers spent about 33,946 days afield pursuing bobcats in the UP and 16,112 days in the LP. About 30% of the furtakers registered at least one bobcat. Nearly 23 ± 1% of the furtakers registered only one bobcat and 7 ± 1% registered two bobcats. An estimated 38% of the furtakers in the UP registered at least one bobcat; 25 ± 2% of these UP furtakers registered one bobcat and 13 ± 1% registered two bobcats. An estimated 21% of furtakers in the LP registered a bobcat.

Counties with 150 or more furtakers that pursued bobcats included Delta, Chippewa, Roscommon, Marquette, and Menominee counties (Table 3). Counties with more than 65 registered bobcats originating from that county included Delta, Ontonagon, Chippewa and Iron counties.

About 32 ± 1% of bobcat permit-holders reported the bobcat population was stable in the county they preferred to hunt or trap bobcats (Figure 2). About 16 ± 1% reported bobcat numbers were improving and 13 ± 1% reported fewer bobcats. Nearly 29 ± 1% of the permit-holders were uncertain of the status of bobcats.

Hunting

About 49 ± 1% (1,816 hunters) of the permit-holders attempted to hunt bobcats during the 2004-2005 seasons (Table 4). About 665 furtakers hunted in the UP and 1,226 hunted in the LP. These hunters had hunted bobcats an average of eight years (±1 years). Bobcat hunters most frequently hunted on public land (73 ± 1%). About 42 ± 2% of the hunters hunted on private land that was not owned by themselves or their family, while 32 ± 1% hunted bobcats on their own land or land owned by their family. Nearly 31 ± 1% of the hunters hunted on public land only, 27 ± 1% hunted on private land only, and 42 ± 1% hunted on both public and private lands.

Hunters spent about 20,768 days afield hunting bobcats ($\bar{x}$ = 11.4 ± 0.4 days/hunter) and registered an estimated 369 bobcats ($\bar{x}$ = 0.20 ± 0.01 bobcats/hunter, Table 4). Hunters spent about 7,289 days afield hunting bobcats in the UP and 13,201 days hunting bobcats in the LP. Hunters registered about 37% of the bobcats registered by furtakers (Figure 3). About 18% of bobcat hunters harvested at least one bobcat. Nearly 16 ± 1% of hunters registered only one bobcat and 2 ± 1% registered two bobcats. An estimated 18% of the hunters in the

UP registered at least one bobcat; 14 ± 2% of UP trappers registered one bobcat and 4 ± 1% registered two bobcats. An estimated 18% of hunters in the LP registered a bobcat.

Counties with 125 or more hunters pursuing bobcats included Roscommon, Montmorency, Presque Isle, and Alpena (Table 5). Counties with more than 20 registered bobcats originating from that county included Montmorency, Presque Isle, Menominee, Mackinac, and Alpena.

Hunters most frequently used calls (53 ± 2%) or dogs (47 ± 2%) to hunt bobcats (Table 6). Bobcat hunters using dogs participated in an estimated 5,839 ± 394 chases of bobcats. About 33 ± 1% of the bobcat hunters had an opportunity to harvest a bobcat but chose not to harvest the bobcat. Thus, an estimated 597 ± 29 hunters chose not to harvest bobcats on 2,344 ± 192 occasions. Among those hunters that passed up an opportunity to take a bobcat, 31 ± 2% passed one bobcat, 23 ± 2% passed two bobcats; 11 ± 2% passed three bobcats, 8 ± 1% passed four bobcats, and 25 ± 2% passed five or more bobcats. The estimate of the number of bobcats passed up by hunters should be viewed cautiously because hunting partners may have reported passing the same bobcat; thus, the estimate will be inflated by an unknown amount. Few bobcat hunters (5 ± 1%) that hunted with dogs hired a guide service to assist with their hunting (46 ± 9 hunters).

About 32 ± 1% of bobcat hunters reported the bobcat population was stable in the county they preferred to hunt bobcats. About 13 ± 1% reported bobcat numbers were improving and 19 ± 1% reported fewer bobcats. Nearly 26 ± 1% of bobcat hunters were uncertain of the status of bobcats.

Trapping

An estimated 34 ± 1% (1,249 trappers) of the permit-holders trapped bobcats during the 2004-2005 season (Table 7), and these trappers had trapped bobcats an average of seven years (±1 year). About 869 furtakers trapped in the UP and 354 trapped in the LP. Nearly equal proportions of trappers trapped bobcats on private land owned by themselves or their family (47 ± 2%), private lands that were not owned by themselves or their family (44 ± 2%), and public land (46 ± 2%). About 54 ± 2% trapped on private land only, 16 ± 1% of the trappers trapped on public land only, and 30 ± 2% trapped on both public and private lands.

Trappers spent about 29,567 days afield trapping bobcats ($\bar{x}$ = 23.7 ± 1.0 days/trapper), caught 923 bobcats, registered 630 bobcats ($\bar{x}$ = 0.50 ± 0.03 bobcats/trapper), and released 276 bobcats from their traps during the 2004-2005 season (Table 7). Trappers spent about 26,656 days trapping bobcats in the UP and 2,911 days trapping in the LP.

Trappers registered about 63% of the bobcats registered by furtakers (Figure 3). About 43% of bobcat trappers captured at least one bobcat and 39% registered at least one bobcat. Nearly 27 ± 2% of the trappers registered only one bobcat and 12 ± 1% registered two bobcats. An estimated 46% of the trappers in the UP registered at least one bobcat; 29 ± 2% of these UP trappers registered one bobcat and 17 ± 2% registered two bobcats in the UP. An estimated 23% of trappers in the LP registered a bobcat. Nearly 9 ± 1% of the bobcat trappers released 276 bobcats from their traps. About 12 ± 1% of the bobcat trappers caught a bobcat in a trap set for another furbearer.

Counties with 75 or more trappers pursuing bobcats included Delta, Chippewa, Iron, Ontonagon, Marquette, and Menominee (Table 8). Counties with more than 50 registered bobcats originating from that county included Delta, Ontonagon, Iron, and Chippewa.

Most trappers used foothold traps (83%), while 39% of the trappers used body gripping traps ((i.e., conibears) (Table 9). Most trappers preferred to use foothold traps (48%), while 25% preferred to use conibears (Table 10). However, conibears were not legal to use for bobcats in the LP. An estimated 22% of trappers did not have a preferred trap type.

About 44 $\pm$ 2% of bobcat trappers reported the bobcat population was stable in the county they preferred to trap bobcats. About 25 $\pm$ 2% reported bobcat numbers were improving and 10 $\pm$ 1% reported fewer bobcats. Nearly 18 $\pm$ 1% of bobcat hunters were uncertain of the status of bobcats.

DISCUSSION

About 30% of bobcat hunters and trappers combined registered at least one bobcat in Michigan during the 2004-2005 seasons, while 25% of bobcat hunters and trappers harvested at least one bobcat in Michigan during 2003-2004 (Frawley et al. 2004). Success rates in Michigan during recent years have been similar to success rates of hunters and trappers in Wisconsin (26% in 2002 and 35% in 2003; Kitchell and Olson 2003, Kitchell and Olson 2004) and in Pennsylvania (28% in 2002, Lovallo 2003) during recent years.

Prior to 2004, only hunters were allowed to harvest a bobcat in the LP, as bobcat trapping was restricted to the Upper Peninsula (UP) (Frawley et al. 2004). In 2004, an 11-day bobcat trapping season (December 10-20) was held on private lands in portions of the LP. In our present study, we estimated that 354 trappers spent 2,911 days afield, and they captured 158 bobcats and released 69 bobcats alive. About 29% of the trappers captured at least one bobcat. These estimates did not differ significantly from previous estimates of participation and harvest in the LP (Frawley et al. 2005).

Nearly equal numbers of furtakers (hunters and trappers combined) pursued bobcats in the Upper and Lower peninsulas; however, furtakers expended over twice as much effort in the UP than the LP (Table 2). Moreover, furtakers in the UP registered over twice as many bobcats as the furtakers in the LP. The proportion of furtakers registering a bobcat was higher in the UP than the LP (38% versus 21%). These differences between regions partly reflect differences in regulations as furtakers could legally harvest only one bobcat from the LP, while two bobcats could be taken from the UP. Moreover, hunting and trapping seasons were longer in the UP than in the LP (Table 1).

Nearly twice as many people attempted to hunt bobcats in the LP than in the UP (Table 4), although the season is shorter in the LP (Table 1). Hunters in the LP spent nearly twice the amount of days hunting bobcats than their counterparts in the UP. Hunters in the LP had more occasions where they chose not to harvest a bobcat than hunters in the UP; however, the proportion of hunters registering at least one bobcat was the same for hunters in the LP and UP.

More than twice as many furtakers trapped in the UP than in the LP, and these UP trappers devoted nearly nine times more effort than their counterparts in the LP (Table 7). Trappers in the UP also registered about seven times more bobcats than trappers in the LP. These differences between regions were likely the result of differences in regulations. Furtakers could legally harvest only one bobcat from the LP, while two bobcats could be taken from the UP. The length of the trapping season in the UP was greater than 10 times longer than the LP season (Table 1). Furthermore, trappers were allowed to take bobcats in the LP for the first time in recent years starting in 2004 (Frawley et al. 2005).

Although there were nearly 50% more bobcat hunters than trappers in Michigan during the 2004-2005 seasons, trappers registered more than 1.5 times as many bobcats as hunters. Bobcat hunters devoted an average of 56 days of effort per bobcat registered, while trappers spent about a mean of 47 days of effort per bobcat registered.

Hunters that used dogs were more successful than hunters using calls (22% of hunters using dogs registered a cat versus 13% of hunters using calls). Lovallo (2003) reported 35% of hunters using dogs were successful in Pennsylvania during 2002, while 11% of hunters using calls were successful. Kitchell and Olson (2004) reported 47% of hunters using dogs registered a bobcat in Wisconsin during 2003, while 13% of hunters using calls registered a bobcat.

Nearly 9% of the bobcat trappers in Michigan released a bobcat from their traps set during the 2004-2005 season, which was the same proportion reported among trappers in 2003 (Frawley et al. 2004). In comparison, 4% of Wisconsin bobcat trappers released a bobcat from their traps during 2002 and 2003 in Wisconsin (Kitchell and Olson 2003, 2004).

ACKNOWLEDGEMENTS

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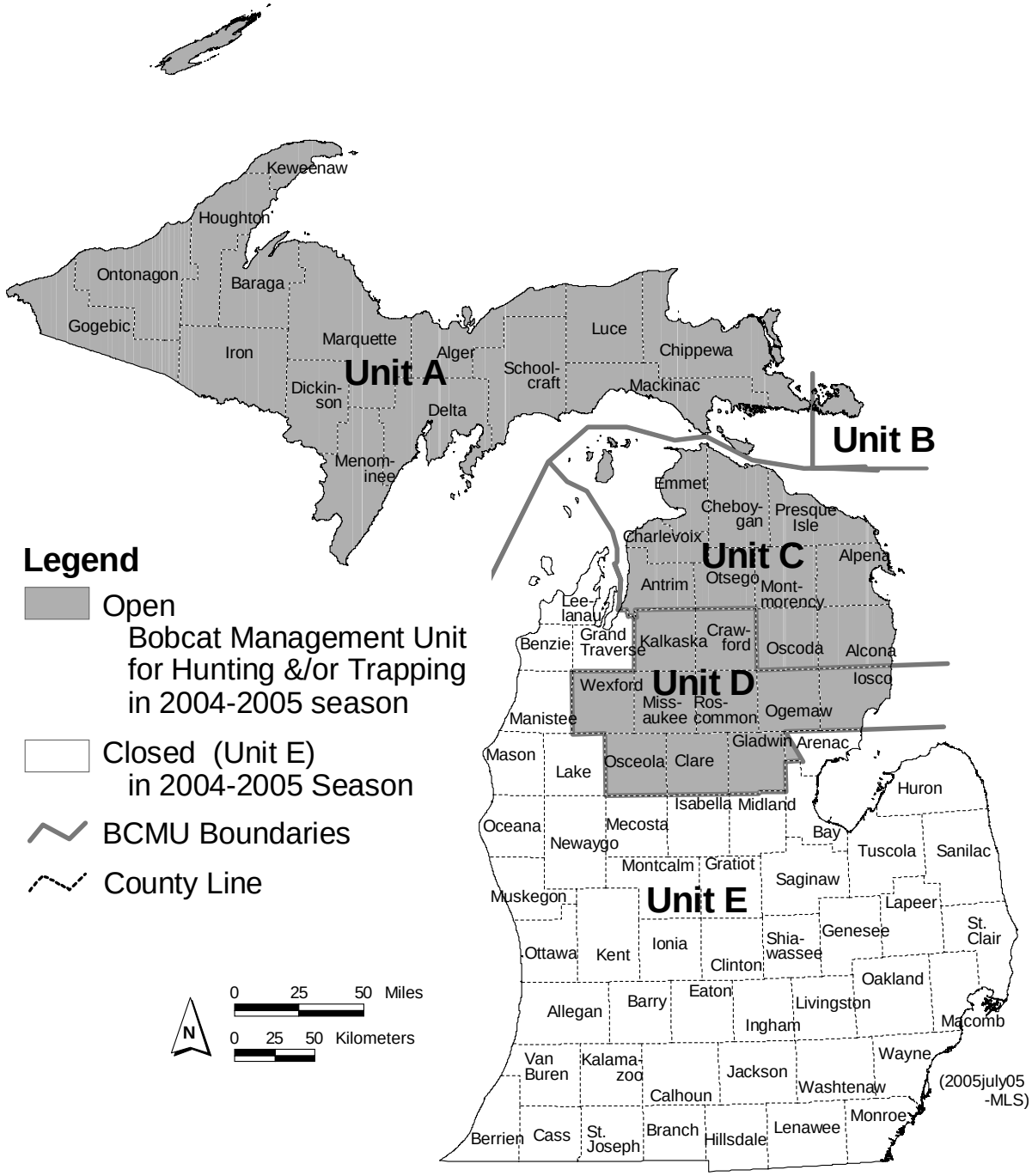

Figure 1. Bobcat Management Units in Michigan for the 2004-2005 hunting and trapping seasons.

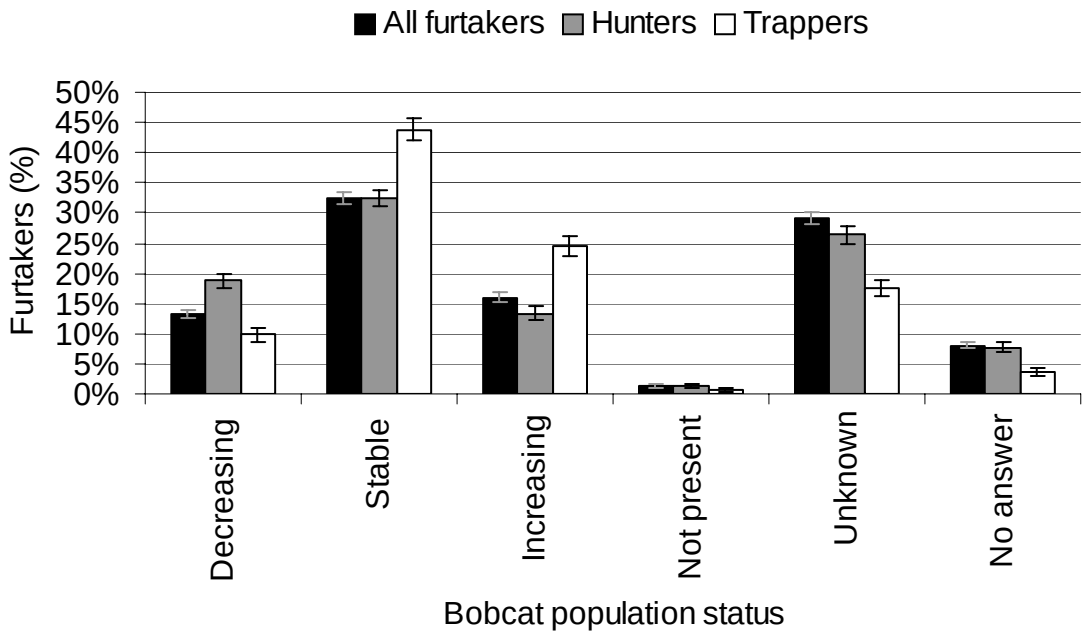

Figure 2. Status of bobcats in Michigan during 2004 as described by bobcat hunters and trappers. Vertical bars represent the 95% CL.

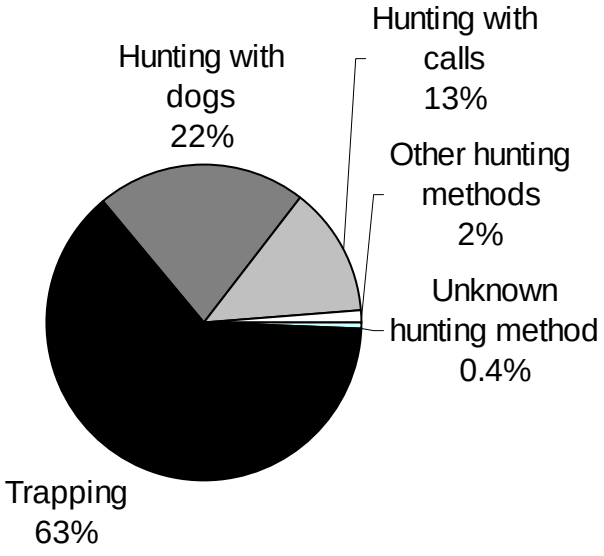

Figure 3. Proportion of bobcats registered in Michigan, 2004-2005 seasons, summarized by method of take.

Table 1. Bobcat hunting and trapping seasons in Michigan during the 2004-2005 season.

Season and area[a]	Season dates	Season length (days)
Hunting		
Units A and B (Upper Peninsula)	December 1, 2004-March 1, 2005	91
Unit C (Lower Peninsula)	January 1, 2005-March 1, 2005	62
Unit D(Lower Peninsula)	January 1, 2005-February 1, 2005	32
Trapping		
Units A and B	October 25, 2004-March 1, 2005	128
Units C and D	December 10-20, 2004	11

[a]See Figure 1 for location of management units.

Table 2. Estimated number of furtakers (hunters and trappers combined) attempting to capture a bobcat, days spent afield (effort), bobcats registered, and proportion of furtakers that registered a bobcat for the 2004-2005 season in Michigan, summarized by area.

	Furtakers[a]		Hunting and trapping effort (days)		Bobcats registered[b]		Furtakers that registered a bobcat	
Area	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL
Upper Peninsula	1,365	39	33,946	1,728	698	40	38	2
Lower Peninsula	1,432	39	16,112	734	298	22	21	1
Unit C	758	32	8,743	587	159	16	21	2
Unit D	794	33	7,369	434	139	15	17	2
Unknown	100	13	278	100	3	3	1	2
Statewide	2,726	35	50,335	1,762	999	44	30	1

[a]Number of furtakers does not add up to statewide total because furtakers could hunt and trap in more than one area. Separate estimates for hunting and trapping seasons are presented in tables 4 and 7.

[b]Although all furtakers harvesting a bobcat were required to present their animals at a Department of Natural Resource office for registration, this survey does not present information collected from registered bobcats.

Table 3. Estimated number of furtakers (hunters and trappers combined) attempting to capture a bobcat, days spent afield (effort), bobcats registered, and proportion of furtakers that registered a bobcat for the 2004-2005 season in Michigan, summarized by county.

	Furtakers[a]		Hunting and trapping effort (days)		Bobcats registered		Furtakers that registered a bobcat	
County	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL
Alcona	126	14	808	129	23	6	18	5
Alger	72	11	1,089	228	23	8	24	7
Alpena	148	16	1,692	259	26	7	18	4
Antrim	40	8	418	125	10	4	25	9
Arenac	17	5	97	38	1	2	8	9
Baraga	64	10	1,200	276	22	7	30	8
Charlevoix	36	8	373	107	9	4	24	9
Cheboygan	130	15	1,382	227	12	4	9	3
Chippewa	191	18	3,278	497	71	14	27	4
Clare	117	14	947	144	17	5	15	4
Crawford	107	13	743	130	7	4	7	3
Delta	223	19	4,275	558	107	16	36	4
Dickinson	117	14	2,215	425	49	11	33	6
Emmet	32	7	377	125	4	3	14	8
Gladwin	88	12	603	105	13	5	15	5
Gogebic	88	12	1,868	352	64	13	49	7
Houghton	64	10	1,783	444	29	9	34	8
Iosco	72	11	620	117	9	4	12	5
Iron	120	14	3,037	488	67	13	41	6
Kalkaska	72	11	525	107	9	4	12	5
Keweenaw	12	4	200	108	4	3	38	20
Luce	80	12	1,041	217	14	5	18	6
Mackinac	140	15	2,124	388	33	9	19	4
Marquette	162	16	3,440	539	40	9	22	4
Menominee	153	16	4,113	658	62	13	30	5
Missaukee	108	13	714	117	14	5	13	4
Montmorency	145	15	1,138	173	30	7	21	4
Ogemaw	110	14	810	130	16	5	14	4
Ontonagon	113	14	2,559	479	87	15	53	6
Osceola	75	11	474	88	17	5	23	6
Oscoda	106	13	777	135	12	4	11	4
Otsego	54	10	379	91	7	4	14	6
Presque Isle	140	15	1,398	224	26	7	19	4
Roscommon	185	17	1,306	158	25	6	13	3
Schoolcraft	132	15	1,724	338	26	7	18	4
Wexford	81	12	529	98	10	4	13	5
Unspecified	100	13	278	100	3	3	1	2

[a]Number of furtakers does not add up to statewide total because trappers could trap in more than one county.

Table 4. Estimated number of hunters, hunting effort (days), bobcats passed, bobcats registered, and proportion of hunters that registered a bobcat in Michigan for the 2004-2005 seasons, summarized by area.

	Hunters[a]		Hunting effort (days)		Bobcats passed by hunters[b]		Bobcats registered by hunters		Hunters that registered at least one bobcat	
Area	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL
Upper Peninsula	665	31	7,289	552	574	78	150	18	18	2
Lower Peninsula	1,226	38	13,201	695	1,727	173	215	19	18	1
Unit C	680	31	7,509	556	879	117	130	15	19	2
Unit D	667	31	5,692	386	847	108	85	12	13	2
Unspecified	55	10	278	100	43	19	3	3	3	3
Statewide	1,816	40	20,768	877	2,344	192	369	26	18	1

[a]Number of hunters does not add up to statewide total because trappers could trap in more than one area.
[b]Bobcats that hunter could have harvested but chose not to harvest.

Table 5. Estimated number of hunters, hunting effort (days), bobcats passed, bobcats registered, and proportion of hunters that registered a bobcat in Michigan for the 2004-2005 seasons, summarized by county.

	Hunters[a]		Hunting effort (days)		Bobcats passed by hunters[b]		Bobcats registered by hunters		Hunters that registered at least one bobcat	
County	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL
Alcona	110	14	658	117	88	31	19	6	17	5
Alger	42	8	377	97	26	9	6	4	10	6
Alpena	127	15	1,398	236	127	27	20	6	16	4
Antrim	30	7	279	102	9	4	7	4	24	10
Arenac	17	5	82	33	7	4	1	2	8	9
Baraga	19	6	75	28	1	2	1	2	8	8
Charlevoix	30	7	317	103	19	8	7	4	24	10
Cheboygan	117	14	1,192	216	136	40	9	4	7	3
Chippewa	106	13	704	125	39	14	14	5	12	4
Clare	95	13	709	122	82	22	13	5	14	5
Crawford	104	13	662	119	142	42	7	4	7	3
Delta	113	14	1,035	197	110	31	16	6	12	4
Dickinson	64	10	464	125	38	13	13	5	20	7
Emmet	25	6	320	121	14	8	3	2	12	9
Gladwin	75	11	460	91	67	23	7	4	10	4
Gogebic	36	8	298	80	54	23	19	8	32	10
Houghton	22	6	166	58	1	2	0	0	0	0
Iosco	59	10	500	107	43	16	7	4	12	6
Iron	39	8	241	67	25	18	7	4	15	8

[a]Number of hunters does not add up to statewide total because trappers could trap in more than one area.
[b]Bobcats that hunter could have harvested but chose not to harvest.

Table 5. (Continued) Estimated number of hunters, hunting effort (days), bobcats passed, bobcats registered, and proportion of hunters that registered a bobcat in Michigan for the 2004-2005 seasons, summarized by county.

	Hunters[a]		Hunting effort (days)		Bobcats passed by hunters[b]		Bobcats registered by hunters		Hunters that registered at least one bobcat	
County	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL
Kalkaska	64	10	401	88	58	21	1	2	2	2
Keweenaw	7	4	61	34	4	5	1	2	20	22
Luce	54	10	431	114	26	12	4	3	8	5
Mackinac	104	13	943	185	45	16	20	7	17	5
Marquette	98	13	818	154	59	21	9	4	9	4
Menominee	81	12	818	159	71	21	23	7	23	6
Missaukee	94	13	541	100	108	30	9	4	9	4
Montmorency	134	15	991	157	169	53	25	6	18	4
Ogemaw	95	13	589	104	74	24	14	5	15	5
Ontonagon	36	8	207	74	17	13	6	4	12	7
Osceola	61	10	359	76	64	20	9	4	14	6
Oscoda	100	13	733	131	113	41	10	4	10	4
Otsego	52	9	334	82	67	26	7	4	14	6
Presque Isle	132	15	1,288	219	137	37	23	6	18	4
Roscommon	162	16	1,057	142	158	35	12	4	7	3
Schoolcraft	77	11	649	130	58	16	10	4	13	5
Wexford	59	10	333	73	45	15	4	3	7	4
Unspecified	55	10	278	100	43	19	3	3	3	3

[a]Number of hunters does not add up to statewide total because trappers could trap in more than one area.
[b]Bobcats that hunter could have harvested but chose not to harvest.

Table 6. Estimated number of hunters, hunting effort (days), bobcats passed, bobcats registered, and proportion of hunters that registered a bobcat in Michigan for 2004-2005 seasons, summarized by hunting method and area.

Variable and area	Hunting method: Dogs Estimate	Dogs 95% CL	Calls Estimate	Calls 95% CL	Other Estimate	Other 95% CL	Unknown Estimate	Unknown 95% CL
Hunters (no.)[a]								
UP	259	20	360	24	64	10	20	6
LP	642	30	638	30	48	9	20	6
Unit C	376	24	335	23	26	7	10	4
Unit D	347	23	341	23	22	6	10	4
Unspecified	38	8	10	4	0	0	9	4
Statewide	855	34	969	35	111	14	48	9
Hunting effort (days)								
UP	3,427	428	2,972	274	745	219	146	60
LP	7,878	598	4,857	346	289	83	176	74
Unit C	4,601	468	2,655	273	184	72	69	56
Unit D	3,277	316	2,202	207	106	41	107	49
Unspecified	224	94	27	14	0	0	26	28
Statewide	11,529	760	7,856	434	1,034	234	349	103
Bobcats passed by hunters (no.)								
UP	406	71	137	26	22	11	9	6
LP	1,284	158	424	60	14	6	4	5
Unit C	654	109	215	40	10	5	0	0
Unit D	630	97	208	40	4	4	4	5
Unspecified	39	19	1	2	0	0	3	3
Statewide	1,729	176	563	66	36	12	16	8
Bobcats registered by hunters (no.)								
UP	100	16	40	9	9	4	1	2
LP	116	14	90	12	7	4	3	2
Unit C	75	11	49	9	4	3	1	2
Unit D	40	8	40	8	3	2	1	2
Unspecified	3	3	0	0	0	0	0	0
Statewide	218	21	130	15	16	5	4	3
Hunters that registered at least one bobcat (%)								
UP	30	4	10	2	14	6	7	8
LP	18	2	14	2	15	7	14	11
Unit C	20	3	15	3	17	10	14	16
Unit D	12	2	12	2	13	10	14	16
Unspecified	4	4	0	0	0	0	0	0
Statewide	22	2	13	1	14	4	9	6

[a]Number of hunters does not add up to statewide total because hunters could hunt in more than one area.

Table 7. Estimated number of trappers, trapping effort (days), bobcats captured, bobcats released, bobcats registered, and proportion of trappers that captured and registered a bobcat in Michigan for the 2004-2005 seasons, summarized by area.

	Trappers[a]		Trapping effort (days)		Bobcats captured by trappers		Bobcats released alive by trappers		Bobcats registered by trappers[b]		Trappers that captured at least one bobcat		Trappers that registered at least one bobcat	
Area	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL	%	95% CL
Upper Peninsula	869	34	26,656	1,590	765	59	207	38	548	36	50	2	46	2
Lower Peninsula	354	23	2,911	226	158	25	69	18	82	12	29	3	23	3
Unit C	152	16	1,233	148	56	13	27	11	29	7	29	5	19	4
Unit D	202	18	1,677	176	101	21	42	15	54	10	30	4	26	4
Unspecified	46	9	0	0	0	0	0	0	0	0	0	0	0	0
Statewide	1,249	38	29,567	1,586	923	63	276	42	630	37	43	2	39	2

[a]Number of trappers does not add up to statewide total because trappers could trap in more than one county.
[b]The difference between the number of bobcats captured and number of bobcats released does not equal the number of bobcats registered because incidental captures were not included.

Table 8. Estimated number of trappers, trapping effort (days), bobcats captured, bobcats released, bobcats registered, and proportion of trappers that captured and registered a bobcat in Michigan for the 2004-2005 seasons, summarized by county.

	Trappers		Trapping effort (days)		Bobcats captured by trappers		Bobcats released alive by trappers		Bobcats registered by trappers		Trappers that captured at least one bobcat		Trappers that registered at least one bobcat	
County	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL	%	95% CL
Alcona	25	6	150	45	4	3	0	0	4	3	18	10	18	10
Alger	39	8	711	190	27	10	9	5	17	7	41	10	33	10
Alpena	40	8	294	65	13	5	4	3	6	3	29	9	14	7
Antrim	14	5	139	48	6	4	3	2	3	2	30	17	20	15
Arenac	3	2	14	16	0	0	0	0	0	0	0	0	0	0
Baraga	51	9	1,125	268	38	12	14	8	20	7	46	9	34	9
Charlevoix	6	3	56	31	1	2	1	2	1	2	25	27	25	27
Cheboygan	27	7	191	52	9	5	6	5	3	2	21	10	11	8
Chippewa	106	13	2,574	452	75	18	19	8	56	12	41	6	37	6
Clare	29	7	239	60	10	7	6	5	4	3	20	10	15	9
Crawford	9	4	81	37	0	0	0	0	0	0	0	0	0	0
Delta	130	15	3,239	480	127	25	36	14	91	15	54	6	52	6
Dickinson	67	11	1,751	363	43	11	7	4	36	9	48	8	43	8
Emmet	7	4	58	31	3	2	1	2	1	2	40	27	20	22
Gladwin	19	6	143	49	20	14	14	11	6	3	31	15	31	15
Gogebic	59	10	1,570	339	74	22	27	16	45	11	59	8	54	9
Houghton	49	9	1,617	426	40	12	9	6	29	9	50	9	44	9
Iosco	17	5	120	41	6	6	3	3	1	2	8	9	8	9
Iron	97	13	2,795	474	65	13	6	4	59	12	48	7	45	7

[a]Number of trappers does not add up to statewide total because trappers could trap in more than one county.

Table 8. (Continued) Estimated number of trappers, trapping effort (days), bobcats captured, bobcats released, bobcats registered, and proportion of trappers that captured and registered a bobcat in Michigan for the 2004-2005 seasons, summarized by county.

	Trappers		Trapping effort (days)		Bobcats captured by trappers		Bobcats released alive by trappers		Bobcats registered by trappers		Trappers that captured at least one bobcat		Trappers that registered at least one bobcat	
County	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	No.	95% CL	%	95% CL	%	95% CL
Kalkaska	17	5	124	43	9	4	1	2	7	4	42	16	42	16
Keweenaw	4	3	139	103	3	2	0	0	3	2	67	36	67	36
Luce	38	8	610	179	12	4	1	2	10	4	31	10	27	10
Mackinac	49	9	1,181	320	16	7	3	3	13	6	21	8	18	7
Marquette	90	12	2,622	495	45	12	13	8	32	8	34	7	31	6
Menominee	88	12	3,294	624	43	11	4	4	39	10	34	7	33	7
Missaukee	23	6	174	50	12	7	4	4	6	3	25	12	25	12
Montmorency	20	6	148	46	10	5	4	4	6	3	43	15	29	14
Ogemaw	27	7	221	60	6	5	4	5	1	2	11	8	5	6
Ontonagon	91	12	2,353	447	111	27	30	20	81	15	62	7	62	7
Osceola	20	6	116	39	9	4	0	0	9	4	43	15	43	15
Oscoda	9	4	43	23	1	2	0	0	1	2	17	18	17	18
Otsego	4	3	45	28	0	0	0	0	0	0	0	0	0	0
Presque Isle	16	5	110	39	9	8	7	8	3	2	18	13	18	13
Roscommon	35	8	249	62	20	8	4	4	13	5	42	11	38	11
Schoolcraft	62	10	1,074	276	45	16	27	12	16	6	33	8	21	7
Wexford	29	7	197	53	10	5	4	3	6	3	30	11	20	10
Unspecified	46	9	0	0	0	0	0	0	0	0	0	0	0	0

[a]Number of trappers does not add up to statewide total because trappers could trap in more than one county.

Table 9. Trap type used by bobcat trappers in the 2004-2005 season in Michigan.

Trap type	Trappers (%)	95% CL	Trappers (No.)	95% CL
Foothold traps	83	1	1,040	36
Conibears	39	2	493	27
Live traps	<1	<1	6	3
Snares[a]	1	<1	12	4

[a]Snares were not legal to use to capture bobcats, although they were reported.

Table 10. Preferred trap type of bobcat trappers in Michigan.

Trap type	Trappers (%)	95% CL	Trappers (No.)	95% CL
Foothold traps	48	2	599	29
Conibears	25	2	307	22
Snares[a]	4	1	49	9
No preference	22	2	275	21
No answer	2	<1	20	6

[a]Snares were not legal to use to capture bobcats.

Appendix A. The questionnaire sent to people that obtained a bobcat harvest permit in Michigan for the 2004-2005 bobcat hunting and trapping seasons.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES, WILDLIFE DIVISION
PO BOX 30030 LANSING MI 48909-7530

BOBCAT HUNTER AND TRAPPER SURVEY

This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.

- It is important that you complete and return this questionnaire even if you did not harvest a bobcat during the most recent hunting and trapping seasons.
- Only the person this questionnaire was addressed to should answer these questions.

PART A: Hunting Questions

1. Did you <u>hunt</u> bobcats during the 2004-05 season?

1 ☐ Yes 2 ☐ No (*Skip to Question #9*)

2. About how many years have you <u>hunted</u> bobcats? _____ Years

3. If you <u>hunted</u> bobcats during the 2004-05 season, please complete the following table.

HUNTING METHOD (Select hunting method used.)	**COUNTY HUNTED** (For each hunting method used, list the county that you hunted on separate lines.)	**NUMBER OF DAYS HUNTED** (Count all days hunted even if you did have an opportunity to take a bobcat)	**NUMBER OF BOBCAT REGISTERED** (Count only bobcat where a seal was attached to the pelt, and the animal was returned to you.)	**NUMBER OF BOBCATS NOT TAKEN** (Count the number of bobcats you called within range or treed but choose <u>not</u> to harvest.)
1 ☐ Dogs 2 ☐ Calls 3 ☐ Other				
1 ☐ Dogs 2 ☐ Calls 3 ☐ Other				
1 ☐ Dogs 2 ☐ Calls 3 ☐ Other				
1 ☐ Dogs 2 ☐ Calls 3 ☐ Other				

4. On what lands do you <u>hunt</u> bobcats in most years? (*You may check more than one.)*

1 ☐ Property owned by me or my family
2 ☐ Private land, with permission
3 ☐ Private land open to public hunting (For example, Commercial Forests, Hunter Access Program)
4 ☐ Public land (State Game Area, State or National Forest, etc.)

5. Did you hunt bobcats with dogs during the 2004-05 season?

1 ☐ Yes 2 ☐ No (*Skip to Question #9*)

6. Who owned the dogs that you used to hunt bobcats during the 2004-05 season. (Check one)

1 ☐ Normally use dogs that I own.
2 ☐ Normally use dogs owned by someone else.
3 ☐ Normally use a combination of my dogs and dogs owned by someone else.

Continued on next page

7. **Report the number of bobcat chases with dogs you participated in during the 2004-05 season?** _____ Chases

8. **Did you hire a guide to assist with hunting bobcats at any time during the 2004-05 season?** 1 ☐ Yes 2 ☐ No

PART B: Trapping Questions

9. **Did you attempt to harvest a bobcat while <u>trapping</u> in the 2004-05 season?**
   1 ☐ Yes 2 ☐ No (*Skip to Question #16*)

10. **About how many years have you <u>trapped</u> bobcats?** _____ Years

11. **If you <u>trapped</u> bobcats during the 2004-05 season, please complete the following table.**

COUNTY TRAPPED (List each county that you trapped for bobcat.)	**NUMBER OF DAYS TRAPPED**	**NUMBER OF BOBCAT CAUGHT** (Count all bobcats you removed from your traps dead or alive.)	**NUMBER OF BOBCAT CAUGHT AND RELEASED** (Count only bobcats you released alive from your traps.)	**NUMBER OF BOBCAT REGISTERED** (Count only bobcat where a seal was attached to the pelt, and the animal was returned to you.)

12. **On what lands do you trap bobcats in most years?** (*You may check more than one.)*
   1 ☐ Property owned by me or my family
   2 ☐ Private land, with permission
   3 ☐ Private land open to public hunting (For example, Commercial Forests, Hunter Access Program)
   4 ☐ Public land (State Game Area, State or National Forest, etc.)

13. **Which capture method did you use when you attempted to harvest bobcats in the 2004-05 season?** *(Check all that apply.)*
   1 ☐ Foothold traps 2 ☐ Conibears 3 ☐ Other (please specify _____)

14. **Which capture method do you <u>prefer</u> to catch bobcats?** *(Check one.)*
   1 ☐ Foothold traps 2 ☐ Snares 3 ☐ Conibears 4 ☐ No preference

15. **Did you catch any bobcats in traps that were set for another species in the 2004-05 season?**
   1 ☐ Yes 2 ☐ No

PART C: General Questions

16. **Compared to the previous three years, what is the status of bobcats in the county that you prefer to hunt or trap bobcats in the 2004-05 season?**
   1 ☐ Increasing 2 ☐ Decreasing 3 ☐ Stable 4 ☐ Not present 5 ☐ Unknown

17. **Do you have any comments or suggestions about bobcat management in Michigan?**

_____

_____

_____

_____

_____

_____

_____

_____

Please return questionnaire in the enclosed postage-paid envelope.
Thank you for your help.

Attachment B

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
Wildlife Division Report No. 3427
December 2004

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BOBCAT HUNTER AND TRAPPER OPINION SURVEY

Brian J. Frawley, Dwayne Etter, and David Bostick

ABSTRACT

This study was done to investigate characteristics of bobcat hunters and trappers, to determine their hunting and trapping practices, and to determine how these furtakers view the impacts of harvest on bobcat. In addition, hunters and trappers were asked whether they planned to trap bobcats next year in the Northern Lower Peninsula (NLP) and whether they would apply for a Wisconsin bobcat license if allowed. An estimated 2,379 furtakers hunted bobcats and 1,031 furtakers trapped bobcats during the 2003-2004 season in Michigan. Hunters spent about 24,400 days afield hunting bobcats and harvested an estimated 416 bobcats. About 15% of bobcat hunters harvested at least one bobcat. Hunter success was similar in both the Upper Peninsula and NLP. Trappers spent about 26,500 days afield trapping bobcats and harvested an estimated 782 bobcats. About 40% of bobcat trappers harvested at least one bobcat. Hunters most frequently used calls (57%) or dogs (45%) to hunt bobcats. About 31% of the bobcat hunters chose not to harvest the bobcat when they had an opportunity. Most trappers used foothold traps (79%), while 55% of the trappers used conibears (i.e., body gripping traps). Nearly 66% of the furtakers searched most frequently for bobcats in lowland forest habitat. About 42% of bobcat hunters and trappers reported that the bobcat population was stable. About 39% of bobcat hunters and trappers reported that the harvest was at an acceptable level. An estimated 19% of the bobcat hunters and trappers (579 furtakers) that were active in 2003 would be very likely or somewhat likely to trap bobcats in the NLP next year. About 9% of bobcat hunters and trappers (280 furtakers) that were active in 2003 reported that they would be very likely or somewhat likely to apply for a license to hunt or trap bobcats in Wisconsin if permitted.

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IC2578-89 (12/01/2004)

INTRODUCTION

Since 1985, bobcat hunting and trapping regulations in Michigan have changed frequently (Table 1). At the start of this period, the maximum number of bobcats that could be taken per person during hunting and trapping seasons (i.e., bag limit) was unlimited; however, a bag limit of one bobcat per person was established in 1989. From 1989 to 2003, the bag limit and area open to bobcat hunting and trapping generally has increased (Table 1). As regulations have become more liberal, the number of bobcats harvested generally has increased (Figure 1, Table 2).

Bobcat population status and social considerations (i.e., trapper and hunter attitudes) are used when developing trapping and hunting regulations. The primary goal of this study was to determine characteristics of bobcat hunters and trappers (e.g., participation, effort, experience, and harvest), to determine their hunting and trapping practices (e.g., hunting areas, hunting habitat, preferred capture methods, and number of bobcats caught but not harvested), and to determine how these furtakers view the impacts of harvest on bobcat. This information will be used to evaluate existing regulations and to develop future recommendations.

In addition, hunters and trappers were asked whether they planned to trap bobcats next year (2004) in the Northern Lower Peninsula (NLP). In 2004, an additional 11-day trapping season (December 10-20) will be held on private lands in the NLP.

Hunters and trappers also were asked whether they would apply for a license to hunt or trap bobcats in Wisconsin if given an opportunity. Wisconsin currently prohibits nonresidents from hunting or trapping bobcats. As a result of reciprocity agreements, Michigan prohibits Wisconsin residents from hunting or trapping bobcats in Michigan. Wisconsin has been considering allowing nonresidents to hunt and trap bobcats in Wisconsin; however, it is unknown how many current Michigan hunters and trappers might be interested in hunting and trapping bobcats in Wisconsin.

METHODS

Following the 2003 furbearer trapping seasons, a questionnaire was sent to 8,000 randomly selected individuals that had purchased a fur harvester license (Frawley 2004). This represents about 39% of licensees, all of whom had an equal chance of being included in the random sample. From this initial survey, 880 people reported that they had attempted to trap or hunt bobcats in 2003-2004. Among this group, 620 people hunted only, 176 trapped only, and 84 both hunted and trapped bobcats.

In June 2004, a follow-up questionnaire (Appendix A) was sent to these 880 furtakers that had reported attempting to hunt or trap bobcats. As many as two follow-up questionnaires were mailed to nonrespondents. Only four questionnaires were undeliverable. Of the questionnaires that were delivered, 720 (82%) questionnaires were completed and returned.

Estimates from the sample were extrapolated to all bobcat hunters and trappers in 2003, as estimated during the initial fur harvesters survey (Frawley 2004). Estimates were calculated using a simple random sampling design and were presented along with their 95% confidence

limit (CL). In theory, this confidence limit can be added and subtracted from the estimate to calculate the 95% confidence interval (Cochran 1977). The confidence interval is a measure of the precision associated with the estimate and implies that the true value would be within this interval 95 times out of 100. Unfortunately, there are several other possible sources of error in surveys that are probably not evident in calculations of sampling error. They include failure of participants to provide answers (nonresponse bias), question wording, and question order. It is very difficult to measure these biases; thus, estimates were not adjusted for these possible biases.

RESULTS

An estimated 2,980 furtakers harvested 1,198 bobcats in Michigan during the 2003-2004 season (Table 3). About 25% of bobcat hunters and trappers harvested at least one bobcat. Nearly 16 ± 2% of the furtakers took one bobcat, 4 ± 1% took two bobcats, 5 ± 1% took three bobcats, and less than 1% of these furtakers harvested more than three bobcats.

An estimated 2,379 furtakers hunted bobcats during the 2003-2004 season (Table 3). About 805 furtakers hunted in the Upper Peninsula (UP) and 1,538 hunted in the NLP (Table 4). These hunters had hunted bobcats an average of 9 ± 1 years, and about 96 ± 1% of the bobcat hunters were likely to continue hunting bobcat in the future. Bobcat hunters most frequently hunted on public land (76 ± 3%) (Figure 2). About 43 ± 4% of the hunters hunted on private land that was not owned by themselves or their family. While 37 ± 4% hunted bobcats on their own land or land owned by their family. About 25 ± 3% of the hunters hunted on private land that was open to public hunting (e.g., Commercial Forest Lands). About 29 ± 3% of the hunters hunted on public land only, 23 ± 3% hunted on private land only, and 47 ± 4% hunted on both public and private lands.

Hunters spent about 24,400 days afield hunting bobcats and harvested an estimated 416 bobcats (Table 3). Hunters spent about 9,200 days afield hunting bobcats in the UP and nearly 14,400 days hunting bobcats in the NLP (Table 4). About 15% of bobcat hunters harvested at least one bobcat. Hunter success was similar in both the UP and NLP. An estimated 13 ± 3% of the hunters took one bobcat, 2 ± 1% took two bobcats, and less than 1% of the hunters harvested three or more bobcats.

Hunters most frequently used calls (57%) or dogs (45%) to hunt bobcats (Table 5). Bobcat hunters participated in an estimated 6,200 ± 940 dog chases of bobcats. About 31 ± 4% of the bobcat hunters had an opportunity to harvest a bobcat but chose not to harvest the bobcat. Thus, an estimated 733 ± 88 hunters passed up bobcats on 2,058 ± 404 occasions. Among these hunters that passed up an opportunity to take a bobcat, 31 ± 6% passed one bobcat, 25 ± 6% passed two bobcats; 15 ± 5% passed three bobcats, 9 ± 4% passed four bobcats, and 14 ± 5% passed five or more bobcats (Figure 3). The estimate of the number of bobcats passed up by hunters should be viewed cautiously because hunting partners may have reported passing the same bobcat; thus, the estimate will be inflated by an unknown amount.

Nearly 39 ± 4% of bobcat hunters usually hunted alone while pursuing bobcats, while 57 ± 4% of the hunters normally hunted with at least one other hunter (Figure 4). Few bobcat hunters (4 ± 2%) hired a guide service to assist with their hunting (99 ± 36 hunters).

An estimated 1,031 ± 98 furtakers trapped bobcats during the 2003-2004 season (Table 3), and the average number of years that these trappers had trapped bobcats was 10 ± 1 years. About 96 ± 2% of these trappers were likely to continue trapping bobcat in the future. Bobcat trappers most frequently trapped on public land (66 ± 5%) (Figure 5). About 50 ± 6% trapped bobcats on their own land or land owned by their family. About 43 ± 6% of the trappers trapped on private land that was open to public trapping (e.g., Commercial Forest Lands), and 40 ± 6% of the trappers trapped on private land that was not owned by themselves or their family. About 20 ± 5% of the trappers trapped on public land only, 34 ± 5% trapped on private land only, and 45 ± 6% trapped on both public and private lands.

Trappers spent about 26,500 days afield trapping bobcats and harvested an estimated 782 bobcats during the 2003-2004 season (Table 3). About 40% of bobcat trappers harvested at least one bobcat. Nearly 18 ± 4% of the trappers took only one bobcat, 9 ± 3% took two bobcats, and 14 ± 4% took three bobcats. About 16 ± 4% of the bobcat trappers caught a bobcat in a trap set for another furbearer. Nearly 9 ± 3% of the bobcat trappers released 181 ± 79 bobcats from their traps.

Most trappers used foothold traps (79%), while 55% of the trappers used conibears (i.e., body gripping traps) (Table 6). Most trappers preferred to use foothold traps (47%), while 36% preferred to use conibears (Table 7). Relatively few trappers (3%) preferred to use snares, but currently snares are not permitted in Michigan for bobcat. An estimated 13% of trappers did not have a preferred trap type.

Nearly 67 ± 3% of the furtakers searched most frequently for bobcats in lowland forest habitat (Table 8). Among lowland forest types, hunters and trappers most often searched for bobcats in brush and mature forest types.

About 42 ± 3% of bobcat hunters and trappers reported that the bobcat population was stable (Figure 6). Nearly equal proportions of hunters and trappers indicated that bobcat numbers were increasing (17 ± 3%), decreasing (16 ± 3%), or were uncertain about their status (22 ± 3%). The hunters and trappers' perception of the impacts of harvest on bobcats was similar to their views about the status of bobcats. About 39 ± 3% of bobcat hunters and trappers reported that the harvest was at an acceptable level (Figure 7). Nearly equal proportions of hunters and trappers indicated that bobcat were over harvested (13 ± 2%) as under harvested (12 ± 2%). About 34 ± 3% of the hunters and trappers were uncertain of the impacts of harvest on bobcats.

About 11% of bobcat hunters and trappers that were active in 2003 indicated that they would be very likely to trap bobcats in the NLP next year in the newly created trapping season, and 9% of these furtakers indicated that they would be somewhat likely to participate (Table 9). About 3% of bobcat hunters and trappers that were active in 2003 reported that they would be very likely to apply for a license to hunt or trap bobcats in Wisconsin if permitted, and 7% of these furtakers indicated that they would be somewhat likely to apply for a Wisconsin bobcat license (Table 10).

DISCUSSION

About 25% of bobcat hunters and trappers harvested at least one bobcat in Michigan in 2003, which was similar to the success rate of hunters and trappers in Wisconsin (26%) (Kitchell and Olson 2003) and in Pennsylvania (28%) in 2002 (Lovallo 2003).

Although there were nearly twice as many bobcat hunters as trappers in Michigan during the 2003-2004 seasons, trappers harvested nearly twice as many bobcats as hunters. Bobcat hunters devoted an average of 59 days of effort per bobcat harvested, while trappers spent about a mean of 34 days of effort per bobcat harvested. Although trappers were more successful at harvesting a bobcat than hunters, more hunters than trappers passed on the opportunity to harvest a bobcat.

Because trapping was restricted to the UP and hunting occurred in both the Upper and Lower Peninsula in 2003, statewide comparison between hunters and trappers could be misleading. A comparison of hunting and trapping success in the UP, where both hunting and trapping were allowed, revealed that trappers were about three times more likely to harvest a bobcat than hunters (40% versus 13% success). On average, UP trappers also took nearly four times as many bobcats per participant as hunters in the UP (0.76 versus 0.20 bobcats per participant). Lovallo (2003) also reported that trapper success was higher than hunter success in Pennsylvania (41% versus 13% success).

Although hunters were less successful than trappers in Pennsylvania, not all hunting methods had the same hunting success. Lovallo (2003) reported that 35% of hunters using dogs were successful, while 11% of hunters using calls were successful. We did not estimate success by hunting method in Michigan because our sample sizes were too small to produce precise estimates.

Nearly 9% of the bobcat trappers in Michigan released a bobcat from their traps set during the 2003-2004 season. In comparison, 4% of Wisconsin bobcat trappers released a bobcat from their traps during the Wisconsin 2002 season (Kitchell and Olson 2003).

Nearly 67% of the furtakers most commonly searched for bobcats in lowland forest habitat. Bobcat hunters and trappers in Wisconsin also reported that lowland forest habitat was the habitat type that they most often hunted or trapped bobcat (Kitchell and Olson 2003).

We estimated that about 579 bobcat hunters and trappers that were active in 2003 would be very likely or somewhat likely to trap bobcats in the NLP next year. Our estimate included only a small percentage of the number of people that may trap bobcats in the NLP next year because it only included bobcat hunters and trappers that were active in 2003. In contrast, Bull and Peyton (2003) estimated that about 5,200 furtakers that were active in 2002 were very likely or somewhat likely to trap bobcats in the NLP. This latter estimate was obtained from responses from a random sample of all furtakers that purchased a license in 2002.

Beginning with the 2004-2005 bobcat season, all licensed furtakers attempting to harvest a bobcat in Michigan will be required to obtain a free bobcat permit from the Michigan Department of Natural Resources (DNR). The list of furtakers obtaining this permit will form a complete list of bobcat hunters and trappers statewide. Using this list, the DNR will be able to

design future surveys that provide more precise estimates, and this should help improve bobcat management in Michigan.

ACKNOWLEDGEMENTS

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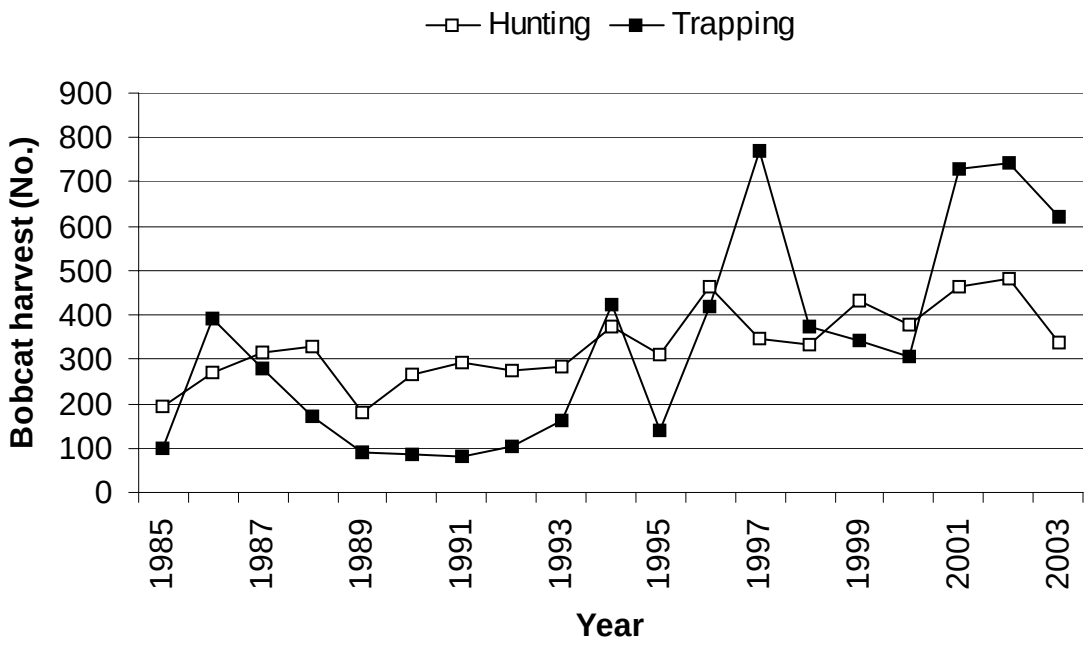


Figure 1. The number of bobcat registered by hunters and trappers in Michigan 1985-2003. All furtakers harvesting a bobcat were required to present these animals at a DNR office for registration.

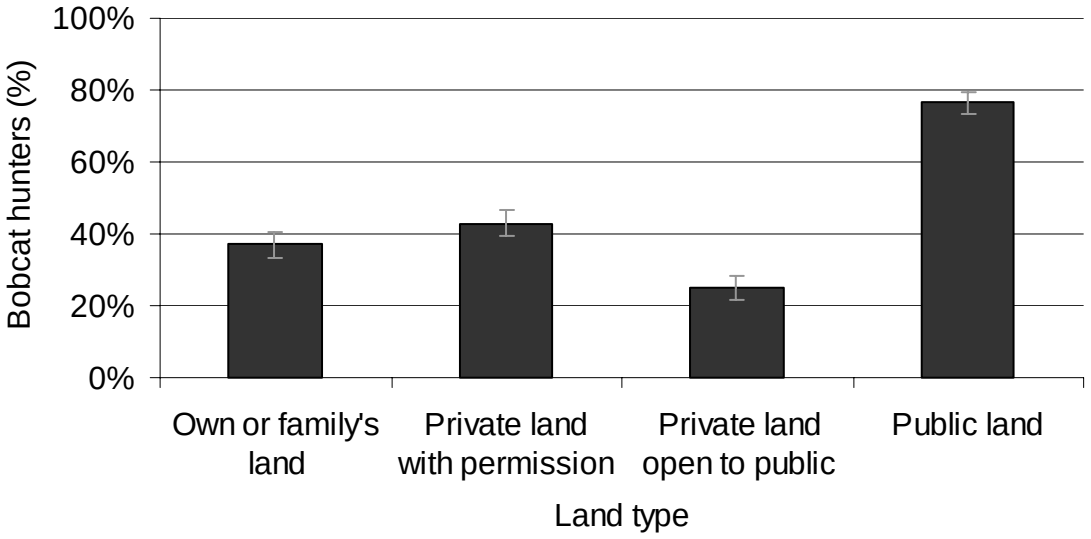


Figure 2. The land type that hunters normally hunted for bobcats in Michigan. The sum of all the land types was greater than 100% because furtakers could select more than one land type.

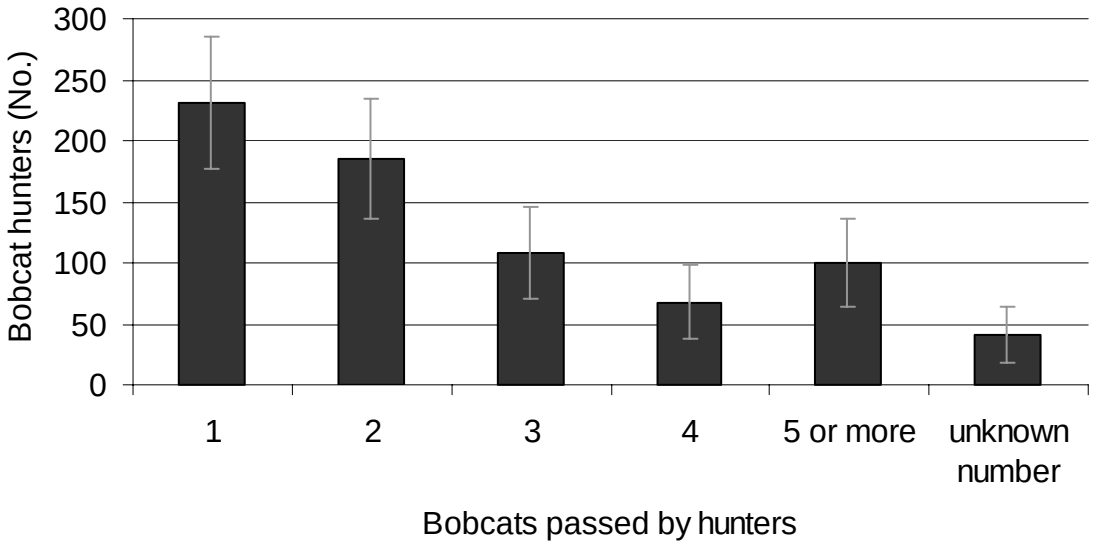


Figure 3. The number of bobcat hunters that passed up an opportunity to harvest a bobcat in Michigan, 2003-2004, summarized by the number of bobcats passed.

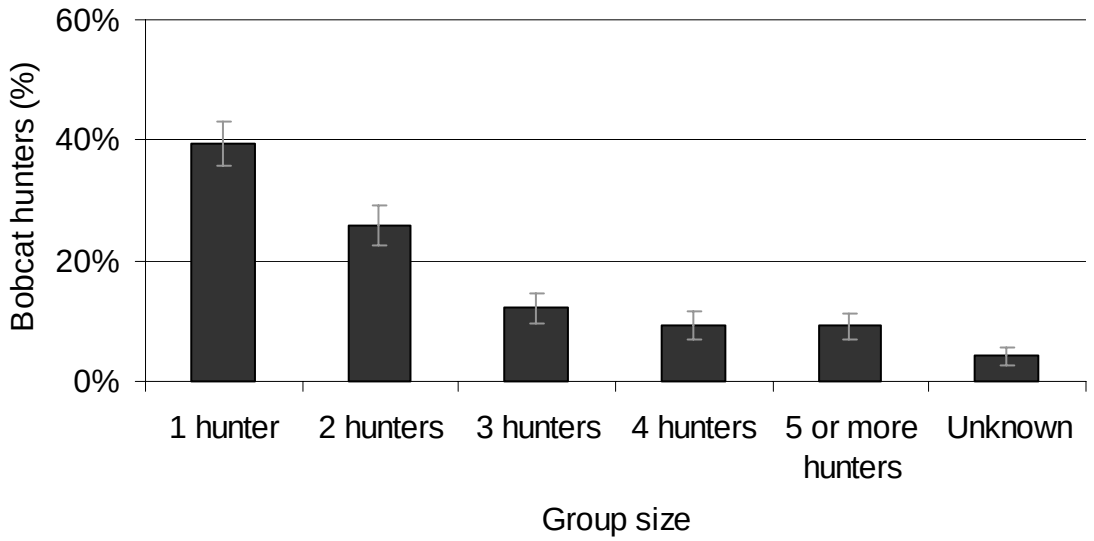


Figure 4. Bobcat hunting party size in Michigan, 2003-2004.

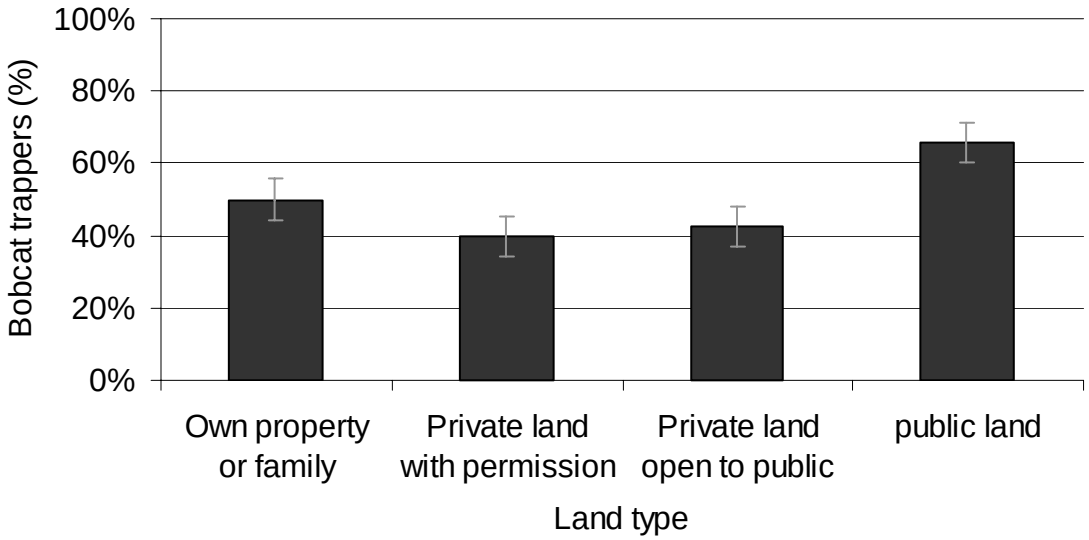


Figure 5. The land type that trappers normally trapped for bobcats in Michigan, 2003-2004.

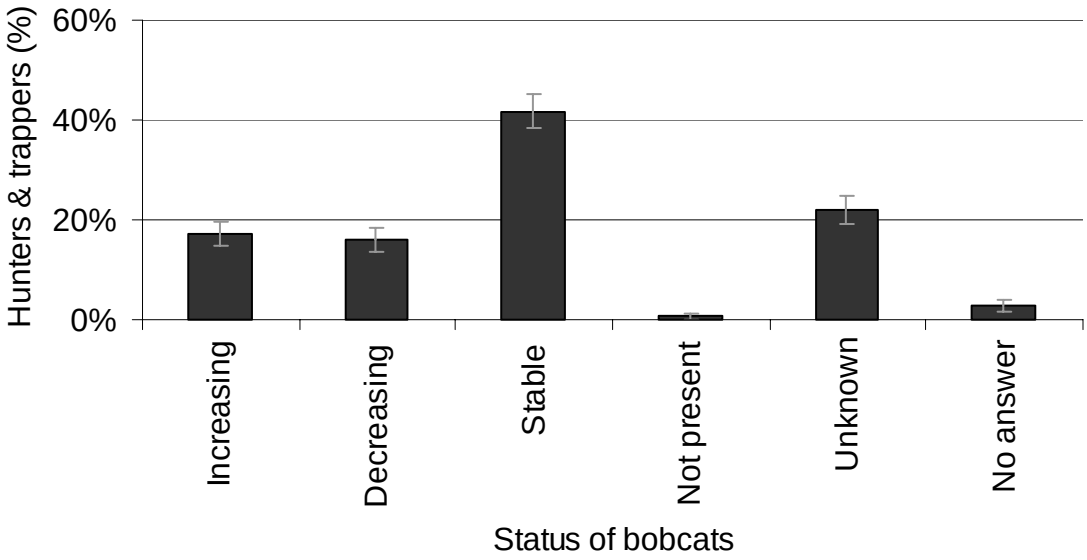


Figure 6. Status of bobcats in Michigan as described by bobcat hunters and trappers.

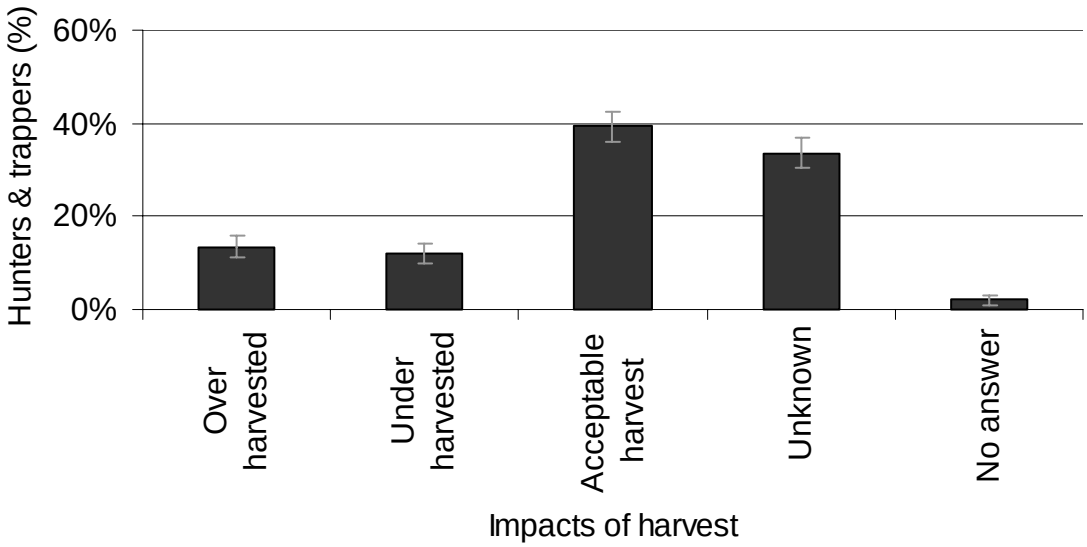


Figure 7. Impacts of hunting and trapping on bobcats in Michigan as described by bobcat hunters and trappers.

Table 1. Resident bobcat trapping and hunting season dates and seasonal bag limits in Michigan, 1985-2003.

		Trapping season zones				Hunting season zones						
		Upper Peninsula[b]		Drummond Island		Upper Peninsula[b]		Drummond Island		Lower Peninsula		
										North[c]	South[d]	
Year	Statewide bag limit[a]	Season dates	Bag limit[a]	Season dates	Bag limit[a]	Season dates	Bag limit[a]	Season dates	Bag limit[a]	Season dates	Season dates	Bag limit[a]
1985	None	10/25-3/1	None	Closed	0	10/25-3/1	None	Closed	0	1/1-3/1	NA	None
1986	None	10/25-3/1	None	Closed	0	10/25-3/1	None	Closed	0	1/1-3/1	NA	None
1987	None	10/25-3/1	None	Closed	0	10/25-3/1	None	Closed	0	1/1-3/1	NA	None
1988	None	10/25-3/1	None	Closed	0	10/25-3/1	None	Closed	0	1/1-3/1	NA	None
1989	1	10/25-3/1	1	Closed	0	10/25-3/1	1	Closed	0	1/1-3/1	1/1-2/1	1
1990	1	10/25-3/1	1	Closed	0	10/25-3/1	1	Closed	0	1/1-3/1	1/1-2/1	1
1991	1	10/25-3/1	1	Closed	0	10/25-3/1	1	Closed	0	1/1-3/1	1/15-2/16	1
1992	1	10/25-3/1	1	Closed	0	10/25-3/1	1	Closed	0	1/1-3/1	1/15-2/16	1
1993	1	10/25-3/1	1	Closed	0	10/25-3/1	1	Closed	0	1/1-3/1	1/15-2/16	1
1994	2	10/25-3/1	2	Closed	0	10/25-3/1	2	Closed	0	1/1-3/1	1/15-2/16	1
1995	2	10/25-3/1	2	10/25-3/1	1	10/25-3/1	2	10/25-3/1	1	1/1-3/1	1/15-2/16	1
1996	3	10/25-3/1	3	10/25-3/1	1	10/25-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1
1997	3	10/25-3/1	3	10/25-3/1	1	10/25-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1
1998	3	10/25-3/1	3	10/25-3/1	1	12/1-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1
1999	3	10/25-3/1	3	10/25-3/1	1	12/1-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1
2000	3	10/25-3/1	3	10/25-3/1	1	12/1-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1
2001	3	10/25-3/1	3	10/25-3/1	1	12/1-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1
2002	3	10/25-3/1	3	10/25-3/1	1	12/1-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1
2003	3	10/25-3/1	3	10/25-3/1	1	12/1-3/1	3	10/25-3/1	1	1/1-3/1	1/15-2/16	1

[a]The statewide bag limit was the maximum number of bobcats that could be taken per person from all zones (hunting and trapping combined), and the bag limit for each zone was the maximum number that could be taken within a zone (hunting and trapping combined).

[b]Excluded Bois Blanc Island during 1985-1988 and Drummond Island in the Upper Peninsula.

[c]During 1985-1988, the North Zone included Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Clare, Emmet, Montmorency, Oscoda, Otsego, and Presque Isle counties. Roscommon county was added during 1985-1986, and Arenac, Crawford, Gladwin, Iosco, Kalkaska, Missaukee, Ogemaw, Osceola, and Roscommon counties were added in 1988. During 1989-2003, the North Zone included Alpena, Antrim, Charlevoix, Cheboygan, Emmet, Montmorency, Otsego, and Presque Isle. Alcona and Oscoda counties were added during 1991-2003.

[d]The South Zone did not exist before 1989. During 1989-2003, the South Zone included Clare, Crawford, Gladwin, Iosco, Kalkaska, Missaukee, Ogemaw, Osceola, Roscommon, and Wexford counties, and Arenac County west of Highway I-75 and north of Highway M-61. The South Zone also included Alcona and Oscoda counties during 1989-1990.

Table 2. Number of bobcats registered by hunters and trappers in Michigan, 1985-2003. All furtakers harvesting a bobcat were required to present these animals at a DNR office for registration.

Year	Trappers	Hunters	Unknown furtaker	Total number of bobcats registered
1985	100	193	14	307
1986	390	268	11	669
1987	277	315	5	597
1988	170	327	0	497
1989	91	178	0	269
1990	85	266	0	351
1991	79	292	0	371
1992	104	276	0	380
1993	163	285	0	448
1994	422	373	0	795
1995	138	311	1	450
1996	420	463	0	883
1997	771	347	0	1,118
1998	375	331	0	706
1999	343	434	0	777
2000	307	379	0	686
2001	728	464	0	1,192
2002	741	482	0	1,223
2003[a]	621	339	0	960

[a]Preliminary totals.

Table 3. Estimated number of participants and their days afield (effort), harvest of bobcats, and success during the 2003-2004 bobcat hunting and trapping seasons in Michigan.

	Active participants[a]		Effort		Harvest[b]		Success[c]		Harvest per participant	
Group	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	Mean	95% CL
Hunters	2,379	93	24,438	2,996	416	90	15	3	0.17	0.04
Trappers	1,031	98	26,478	4,482	782	148	40	6	0.76	0.12
Combined	2,980	58	50,916	5,148	1,198	166	25	3	0.40	0.06

[a]Furtakers that actually went afield to hunt or trap bobcats.
[b]Harvest estimate from survey; see Table 2 for the number of bobcats registered.
[c]Proportion of participants that harvested at least one bobcat.

Table 4. Estimated number of participants and their days afield (effort), harvest of bobcats, and success during the 2003-2004 bobcat hunting and trapping seasons in Michigan, summarized by region.

Group and	Active participants[a]		Effort		Harvest[b]		Success[c]		Harvest per participant	
region	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	Mean	95% CL
Hunters										
UP	805	91	9,171	1,981	163	67	13	4	0.20	0.08
NLP	1,538	105	14,381	2,297	253	57	16	3	0.16	0.04
Unknown	176	48	886	418	0	0	0	0	0.00	0.00
Trappers										
UP	1,031	98	26,478	4,482	782	148	40	6	0.76	0.12
Combined										
UP	1,583	105	35,649	4,971	945	160	32	4	0.60	0.09
NLP	1,538	105	14,381	2,297	253	57	16	3	0.16	0.04
Unknown	176	48	886	418	0	0	0	0	0.00	0.00

[a]Furtakers that actually went afield to hunt or trap bobcats.
[b]Estimate from survey; see Table 2 for the number of bobcats registered.
[c]Proportion of participants that harvested at least one bobcat.

Table 5. Proportion and number of hunters that used various hunting methods to hunt bobcats in Michigan during the 2003-2004 season.

Hunting method and frequency of use	%	95% CL	Number	95% CL
Dogs				
Occasionally	6	2	145	43
Usually	5	2	113	38
Always	35	4	823	91
Total	45	4	1,081	99
Calls				
Occasionally	10	2	244	55
Usually	8	2	185	49
Always	39	4	932	95
Total	57	4	1,361	104
Incidental				
Occasionally	9	2	222	53
Usually	3	1	72	31
Always	3	1	81	33
Total	16	3	375	67

Table 6. Trap type used by bobcat trappers in the 2003-2004 season in Michigan.

Trap type	Trappers (%)	95% CL	Trappers (No.)	95% CL
Foothold traps	79	5	809	91
Conibears	55	6	570	80
Other	1	1	9	11

Table 7. Preferred trap type of bobcat trappers in Michigan.

Trap type	Trappers (%)	95% CL	Trappers (No.)	95% CL
Foothold traps	47	6	484	75
Conibears	36	6	371	67
Snares	3	2	27	19
No preference	13	4	136	42
No answer	1	1	14	14

Table 8. Habitat type that hunters and trappers most frequently searched for bobcats in the 2003-2004 season in Michigan.

Habitat type	Furtakers (%)	95% CL	Furtakers (No.)	95% CL
Upland pine or spruce – regeneration or brush	2	1	72	31
Upland pine or spruce – thinned or pole-sized	2	1	50	26
Upland pine or spruce – large or mature	2	1	59	28
Lowland forest or swamp – regeneration or brush	27	3	814	91
Lowland forest or swamp – thinned or pole-sized	10	2	303	61
Lowland forest or swamp – large or mature	29	3	864	93
Upland hardwoods – regeneration or brush	1	1	18	16
Upland hardwoods – thinned or pole-sized	2	1	50	26
Upland hardwoods – large or mature	1	1	41	23
No answer	24	3	710	87

Table 9. Likelihood that bobcat hunters and trappers would trap bobcats in the NLP in Michigan in 2004.

Response	Furtakers (%)	95% CL	Furtakers (No.)	95% CL
Very likely	11	2	321	63
Somewhat likely	9	2	258	57
Not very likely	13	2	375	67
Not at all likely	63	3	1,877	104
Not sure	3	1	99	36
No answer	2	1	50	26

Table 10. Likelihood that Michigan bobcat hunters and trappers would apply for a permit to hunt or trap bobcats in Wisconsin if allowed.

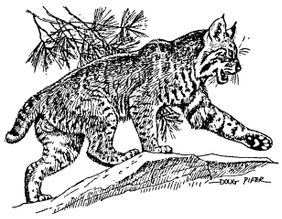
Response	Furtakers (%)	95% CL	Furtakers (No.)	95% CL
Very likely	3	1	77	32
Somewhat likely	7	2	204	51
Not very likely	19	3	556	79
Not at all likely	67	3	1,999	102
Not sure	4	1	118	39
No answer	1	1	27	19

Appendix A. The questionnaire sent to a sample of bobcat hunters and trappers in this study.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES, WILDLIFE DIVISION
PO BOX 30030 LANSING MI 48909-7530

BOBCAT HUNTER AND TRAPPER SURVEY

This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.



- It is important that you complete and return this questionnaire even if you did not harvest a bobcat during the most recent hunting and trapping seasons.
- Only the person this questionnaire was addressed to should answer these questions.

PART A: Hunting Questions

1. Did you <u>hunt</u> bobcats during the 2003-04 season?

1 ☐ Yes 2 ☐ No (*Skip to Question #9*)

2. About how many years have you <u>hunted</u> bobcats? _____ Years

3. How likely is it that you will continue to <u>hunt</u> bobcats in Michigan in the next 5 years?

1 ☐ Very likely 2 ☐ Somewhat likely 3 ☐ Not very likely 4 ☐ Not at all likely 5 ☐ Not sure

4. What is your preferred county to <u>hunt</u> bobcats? _____

5. On what lands do you <u>hunt</u> bobcats in most years? (*You may check more than one.)*

1 ☐ Property owned by me or my family
2 ☐ Private land, with permission
3 ☐ Private land open to public hunting (For example, Commercial Forests, Hunter Access Program)
4 ☐ Public land (State Game Area, State or National Forest, etc.)

6. About how many bobcat chases with dogs were you involved with in the 2003-04 season? _____ Chases

7. Did you intentionally choose <u>not</u> to harvest any bobcats that were within range of your gun or bow while hunting in the 2003-04 season? For example, did you call a bobcat within range or tree a bobcat but then choose <u>not</u> to harvest it?

1 ☐ Yes (Please indicate the number of bobcats passed up _____) 2 ☐ No

8. Do you usually hunt bobcats alone or with partners?

1 ☐ Hunt alone 2 ☐ Hunt with other people (Indicate average number in group _____)

PART B: Trapping Questions

9. Did you attempt to harvest a bobcat while <u>trapping</u> in the 2003-04 season?

1 ☐ Yes 2 ☐ No (*Skip to Question #18*)

10. About how many years have you <u>trapped</u> bobcats? _____ Years

11. How likely is it that you will continue to <u>trap</u> bobcats in Michigan in the next 5 years?

1 ☐ Very likely 2 ☐ Somewhat likely 3 ☐ Not very likely 4 ☐ Not at all likely 5 ☐ Not sure

12. What is your preferred county to trap bobcats? _____

13. On what lands do you trap bobcats in most years? (*You may check more than one.*)

1 ☐ Property owned by me or my family
2 ☐ Private land, with permission
3 ☐ Private land open to public hunting (For example, Commercial Forests, Hunter Access Program)
4 ☐ Public land (State Game Area, State or National Forest, etc.)

14. Which capture method did you use when you attempted to harvest bobcats in the 2003-04 season? *(Check all that apply.)*

1 ☐ Foothold traps 2 ☐ Conibears 3 ☐ Other (please specify _____)

15. Which capture method do you prefer to catch bobcats? *(Check one.)*

1 ☐ Foothold traps 2 ☐ Snares 3 ☐ Conibears 4 ☐ No preference

16. Did you catch any bobcats in traps that were set for another species in the 2003-04 season?

1 ☐ Yes 2 ☐ No

17. Did you release any bobcats from your traps in the 2003-04 season?

1 ☐ Yes (Please indicate the number of bobcats released _____) 2 ☐ No

PART C: General Questions

18. In which habitat type did you hunt or trap for bobcat most frequently in the 2003-04 season? *(Check one.)*

Upland Pine or Spruce	Lowland Forest or Swamp	Upland Hardwoods
1 ☐ Regeneration or brush	4 ☐ Regeneration or brush	7 ☐ Regeneration or brush
2 ☐ Thinned or pole-sized	5 ☐ Thinned or pole-sized	8 ☐ Thinned or pole-sized
3 ☐ Large or mature	6 ☐ Large or mature	9 ☐ Large or mature

19. Compared to the previous three years, what is the status of bobcats in the county that you prefer to hunt or trap bobcats in the 2003-04 season?

1 ☐ Increasing 2 ☐ Decreasing 3 ☐ Stable 4 ☐ Not present 5 ☐ Unknown

20. How would you describe the impacts of hunters and trappers on the bobcat population in the county that you prefer to hunt or trap bobcats in the 2003-04 season?

1 ☐ Over harvested 2 ☐ Under harvested 3 ☐ Harvest at an acceptable level 4 ☐ Unknown

21. Next year bobcats can be trapped December 10-20 on private lands in the northern Lower Peninsula (NLP). Two bobcats can be taken in the Upper Peninsula and NLP, however, only one of these bobcats can be taken from the NLP. How likely is it that you would trap bobcats in the NLP next year? *(Check one.)*

1 ☐ Very likely 2 ☐ Somewhat likely 3 ☐ Not very likely 4 ☐ Not at all likely 5 ☐ Not sure

22. Currently, Michigan bobcat hunters and trappers cannot harvest bobcats in Wisconsin. If Michigan residents could harvest bobcats in Wisconsin, they would need to apply for a limited number of harvest tags, and the maximum number of bobcats that could be taken is one. How likely is it that you would apply for a harvest tag in Wisconsin if Michigan residents were allowed to hunt or trap bobcats in Wisconsin? *(Check one.)*

1 ☐ Very likely 2 ☐ Somewhat likely 3 ☐ Not very likely 4 ☐ Not at all likely 5 ☐ Not sure

Please return questionnaire in the enclosed postage-paid envelope.
Thank you for your help.